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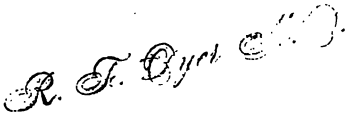
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No. 13 IN THE PHYSICIANS' AND STUDENTS' READY-REFERENCE SERIES.

A PRACTICAL MANUAL

OF

DISEASES OF THE SKIN

BY

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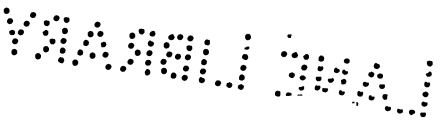
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PREFACE.

In this book no attempt is made to add one more to the already numerous works for the dermatological specialist. Hence, little space is given to theoretical speculations upon pathology and etiology. It is hoped, however, that the medical student and practitioner will find, in the following pages, some return in practical value for the time spent in their perusal.

The author takes occasion to express his obligations for assistance to Dr. J. Williams Lord, his former chief of clinic and present successor in the Chair of Dermatology in the College of Physicians and Surgeons.

Baltimore, Md., December 15, 1891.

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PRACTICAL MANUAL

OF

DISEASES OF THE SKIN.

INTRODUCTION.

A KNOWLEDGE of the diseases of the skin is of great importance to the practitioner. Although skin diseases do not, as a rule, tend to shorten life, the discomfort or disfigurement they produce are so annoying that persons afflicted with them are more emphatic in their demands for relief than if suffering from maladies of much greater gravity. An eczema of very limited extent, a simple ringworm, or an ordinary eruption of acne, will frequently cause the patient more anxiety than a catarrhal pneumonia with its dangerous sequel, or a reducible hernia with its constant menace of fatal strangulation.

The student or young practitioner will find it to his advantage to give some time and attention to the study of this branch of practical medicine. In every community there are sufferers from curable skin diseases who are compelled to bear their afflictions year in and year out because the physicians to whom they have applied for relief failed to recognize the character of the disease, or, recognizing it, failed to apply the appropriate remedy. Hence, a practical knowledge of the diagnosis and treatment of skin diseases may not seldom

have a decisive influence upon the young practitioner's success in obtaining a practice.

It must be confessed, however, that the impression made by most text-books of dermatology is not reassuring. Complicated classifications or "systems," an awkward nomenclature, great prolixity and a lack of definiteness in the description of typical diseases, and an undue multiplication of morbid processes are the besetting sins of many of our standard works.

In the following pages I have tried to give brief and exact descriptions of the various diseases considered, and to indicate the simplest and most direct methods of treatment. The needs of the practitioner have been primarily kept in view. Theoretical questions have been entirely subordinated to plain matters of fact.

ANATOMY AND PHYSIOLOGY OF THE PERSPIRATORY GLANDS.

THE perspiratory glands consist of simple tubules, which at their blind extremities are coiled up into a spherical mass imbedded in the lower portion of the derma, or in the subcutaneous tissue, where they are generally in relation with a mass of fat. The duct, or, rather, that part of the gland not coiled up, passes through the cutis in a straight or slightly wavy line, but becomes spirally twisted on its way through the epidermal layer, ending in a funnel-shaped opening on the surface.

The sweat glands are most numerous in the palms, soles, and axillæ. They are entirely wanting in the glans penis, prepuce, and the margin of the lips. The average number to the square inch is one thousand, and the total number is estimated at nearly two and a half millions, with a secreting surface of about forty thousand square inches. The total length of tubing, supposing the convoluted ends to be uncoiled, would amount to nearly eighty miles.

In the axilla the diameter of the sweat glands is from one-third of a line to a line and a half. (Krause.)

The main function of the perspiratory glands is the secretion of sweat. The smaller glands are lined with a nucleated pavement epithelium, while the larger ones have a lining of cylindrical epithelial cells. The convoluted portion of the gland is surrounded by a net-work of capillaries. They are also richly supplied with nerves. Their secretion contains water, fats, and volatile fatty acids, cholesterin, urea, chlorides, and phosphates. Its

normal reaction is alkaline. Under certain conditions of defective action of the kidneys, the skin may perform the function of these organs vicariously.

The suppression of cutaneous perspiration was formerly looked upon as very serious and generally followed by fatal results. Experiments made upon small animals (rabbits), by covering the entire surface with an impervious varnish, resulted in the death of the animals. These experiments are not conclusive, however, for it has been found that large dogs and horses thus treated do not die. The fatal result in the smaller animals is explained by the rapid loss of heat from the surface when this is covered with an impervious material.

The secretion of sweat varies in different individuals. It is also influenced by differing conditions of environment, such as heat and cold, muscular exertion, dilatation of the superficial vessels, increased blood-pressure, abundant or hot drinks, certain medicines, and, above all, the action of certain nerves.

Stimulation of the vaso-dilator or paralysis of the vaso-constrictor nerves may produce increased secretion of sweat. Excitation of certain special "sweat nerves," the centres of which are situated in the medulla (Nawrocki, Ott) and spinal cord (Luchsinger), causes active secretion. It has been found that this secretion may be produced on stimulating the sweat nerves, even after the extremity has been severed from the body.

"Sweating may be brought about as a reflex act. Thus, when the central stump of the divided sciatic (in which are contained the sweat fibres) is stimulated, sweating is induced in the other limbs, and the introduction of pungent substances into the mouth will frequently give rise to a copious perspiration over the side of the face."[1]

[1] Foster: Physiology. Second Am. ed., p. 499.

DISORDERS OF THE SWEAT GLANDS.

The disorders of the sweat glands are functional; no structural alteration of these glands, independent of any other disease, is known. The sweat may vary in quantity or be altered in quality. The quantitative variations in secretion consist in excessive secretion (*hyperidrosis*) and deficient secretion (*anidrosis*).

I. Quantitative Derangements of the Secretion of Sweat.

Hyperidrosis—Excessive Sweating.

The quantity of sweat excreted in health varies so widely in different individuals that it is difficult to indicate the dividing line between physiological and pathological sweating.

Hyperidrosis may be general or local. The former is most likely to be an accompaniment of some diseased state, as phthisis; or it may occur in the course of an acute febrile affection, as pneumonia, typhoid, malarial, or relapsing fevers. In the latter class of diseases the sweating is an indication of defervescence, and requires no treatment. The phthisical sweats frequently demand therapeutic interference on account of their exhausting effects.

Among the general hyperidroses may be mentioned the so-called "sweating sickness" which formerly prevailed epidemically in portions of Europe, and which has been observed in France as late as the year 1887. For details in regard to this curious disease the reader is referred to the author's "Text-Book of Hygiene."

General hyperidrosis is often an accompaniment of corpulence, constituting a very annoying complication of this derangement of nutrition.

Local hyperidrosis in the majority of cases affects the palms of the hands, soles of the feet, or the axillæ. The foot and axillary sweat has often a very offensive odor.

This odor is not present in the freshly-secreted sweat, but is developed in consequence of certain chemical changes in the secretion. Thin believes it to be due to the presence of an organism which he has named *bacterium fœtidum*. Persons so affected are constantly environed by a fetid exhalation, and may be literally said to "stand in bad odor."

Local sweating also accompanies many nerve lesions or disturbances. Thus, migraine is often accompanied by excessive perspiration limited to the area of distribution of the affected nerve.

The *general* treatment of the excessive sweats of phthisis consists in tonics and astringents. Aromatic sulphuric acid in fifteen drop doses four to six times daily is often of great utility. Atropine in doses of $\frac{1}{200}$ to $\frac{1}{100}$ grain (one-third to half a milligramme) can be relied upon with much confidence to check the excessive secretion, although a permanent effect cannot be hoped for. In these cases local treatment is usually of little avail.

The treatment of the hyperidrosis of obesity is of no avail without such measures as will at the same time result in a diminution of the accumulated fat.[1]

In the *local hyperidroses* the principal reliance must be placed upon local measures. Of course, the condition

[1] See "The Guiding Principles in the Treatment of Excessive Corpulence," in Phil. Med. Times, vol. xvii, pp. 799, 826.

of the general health demands attention, and anæmia or digestive derangements require appropriate treatment. Aside from this the constitutional treatment can be summed up under the general head of hygienic measures, —good food, fresh air, exercise, and possibly tonic medicines.

For the disagreeable sweating of the palms, a lotion of tannic acid, 2 to 3 grains to the ounce of alcohol (1 to 200), or simply cologne-water or bay-rum (Formula 1), are very useful. The application of one of these may be followed by a dusting-powder of starch, prepared chalk, or orris-root. Either of these may be combined with oxide of zinc, boracic acid, salicylic acid, or calamine, with good effect (Formulæ 2 to 4.) Similar measures will generally be effectual in excessive sweating of the axillary region.

For the excessive malodorous sweating of the feet (bromidrosis), many remedies have been recommended. In the milder cases, baths of alum-water, followed by one of the above-mentioned dusting-powders, are sometimes effectual. Formula 5 is used with success by the German army-surgeons. For the severer grades of the affection, however, in which the feet are constantly bathed in sweat, the epidermis macerated, and the skin reddened and tender, and at the same time diffusing a most penetrating and offensive odor, there is only one method of treatment known to me which can be relied upon. It was introduced by Hebra, and has, in numerous cases under my care, never failed to cure the disease. The procedure is as follows :—

The feet are first washed and thoroughly dried. Each foot is then enveloped in a piece of linen or muslin of proper size (about one foot square) thickly spread with diachylon ointment (Hebra's ointment, ung. vaselini

plumbicum; see Formulæ 5, 6). Small pieces of linen spread with the ointment are also inserted between the toes. Clean foot-wear is then put on. On the following day the cloths are taken off, the feet wiped dry with a towel, *but not washed.* One of the absorbent powders above mentioned (Formula 4) is thickly dusted on, and the feet again enveloped with the ointment. This procedure is repeated daily from ten days to two weeks, during which time the feet must not be washed. The ointment is then omitted, but the powder is still used several times a day. After a few days the epidermis is exfoliated in thick, yellowish, parchment-like flakes, and new, soft skin appears. Now for the first time the feet may be washed. The new epidermis is of a healthy, pink color, and the secretion normal. The powder should be continued for some time.

If the hyperidrosis is not entirely cured, the same course should be repeated; but this is rarely necessary.

Thin recommends dusting the shoes and stockings with boracic acid, and wearing a cork sole on the inside of the shoe. He also advises the application of a boracic acid ointment (Formula 7).

ANIDROSIS—DEFECTIVE EXCRETION OF SWEAT.

This should properly be termed hypohidrosis, as the secretion is rarely entirely suppressed. It accompanies certain grave constitutional or nervous affections, as diabetes, tuberculosis, myelitis, and poliomyelitis. Locally it also occurs on eczematous, psoriatic and ichthyotic patches.

The treatment in each case will be that appropriate to the underlying general or local condition. The dryness of the skin may be relieved by the glycerite of starch (Formula 8).

II. Qualitative Disorders of the Sweat Secretion.

BROMIDROSIS—ODOROUS SWEAT.

Certain nervous diseases are accompanied by modifications of the odor, with or without increase in the quantity of the perspiration. Hammond has reported several cases of this kind. The odor is not always offensive, but may even be agreeable, as in Hammond's cases, in two of whom it resembled that of violets.

In the majority of cases, however, the odor of the sweat in bromidrosis is the reverse of agreeable, and is nearly always due to decomposition of the secretion. The treatment of these cases is that mentioned on page 7. In one of Hammond's cases salicylate of sodium in 5-grain (.3 gramme) doses arrested the hyperidrosis as well as the emission of the odor.

CHROMIDROSIS—COLORED SWEAT.

The perspiratory secretion is usually colorless, but sometimes it presents a distinct color. Red, blue, green, yellow, and black sweats have been reported. In many of the reported cases the color was, doubtless, due to some reaction between the sweat and some material adhering to the skin or in the clothing. In others the discoloration was intentionally produced. Colored sweat is also sometimes found in company with uterine or ovarian disorder. In this category probably belong the cases of bloody sweat, or ephidrosis cruenta, so far as the reports may be considered as trustworthy. So competent an observer as Dr. McCall Anderson has reported an interesting case of this affection, and has quoted a number of others from Erasmus Wilson, T. K. Chambers, Pinel, and other authors. It is noticeable that, in all but one of the cases mentioned, the points of appearance of the bloody fluid were on the front of

the body, or on such portions of the surface as could be readily reached with the hands.

Duhring states that colored sweat is "not infrequently connected with uterine disorders," and gives references to a large number of reported cases. In red and yellow sweat Eberth and Babesiu have found bacteria. It is not improbable that colored sweat, unless feigned, is always due to the presence of minute organisms. It is known, for example, that the color of blue pus is produced by a bacterium.

The treatment might be rationally germicidal. A lotion of mercuric bichloride one grain to the ounce (1 to 500) or Labarraque's solution (liq. sodæ chlorinatæ) should be effective in case the color is due to micro-organisms.

URIDROSIS—URINOUS SWEAT.

In cases of kidney disease, in Asiatic cholera, and in experimental observations on the cutaneous perspiration, urea and other constituents of the urine have been found in the sweat. As this is merely an incident in some grave underlying disease generally, it does not require any special treatment.

SUDAMEN—SWEAT BLISTERS.

In cases of typhoid, typhus, and puerperal fevers, rheumatism and pneumonia, there is frequently an eruption of minute whitish, or pearly, non-inflammatory vesicles, coincident with the so-called "critical sweat." The vesicles are due to the excessive secretion, which elevates the epidermis in minute areas. The eruption has no especial significance, and requires no treatment.

PRICKLY HEAT.

Under ordinary circumstances the average quantity of sweat secreted in twenty-four hours by a healthy

adult is about twelve ounces. This, however, is materially modified by varying conditions of external temperature, character, and amount of food and drink, dress, emotional conditions, or the swallowing of certain medicines. The exact quantity of fluid and other matters discharged daily in the sweat can, therefore, not be definitely stated.

Ordinarily this secretion takes place without producing any discomfort; but when it becomes excessive in consequence of the causes mentioned, it often gives rise to a most aggravating and troublesome disease of the skin.

The characteristic features of prickly heat are so familiar as to make any extended description unnecessary. It occurs in the form of small, bright-red pimples, rarely larger than a pin-head in size, thickly scattered over the surface of the body, and accompanied by a most distressing sense of tingling, burning, and itching. Often the small red pimples are capped by a minute blister containing a droplet of a colorless or pearly fluid. The eruption may appear anywhere upon the skin except the palms of the hands and soles of the feet, where it is rarely or never seen. It is nearly always limited to those portions of the body covered by the clothing. In plump, well-fed children, it is also often seen in the folds of the skin at the front of the neck.

These little red elevations indicate the mouths of the sweat glands, which are irritated and inflamed in consequence of excessive activity. This is generally due to high temperature, excessive exertion, and unsuitable clothing. The inordinate use of hot drinks, confinement in close, ill-ventilated apartments, lack of attention to proper cleanliness of the skin, improper

administration of medicines containing opiates or similar drugs which have an irritating action upon the skin, may give rise to or intensify this disease. Disturbances of digestion are also believed to be effective in its causation.

The distress caused by the eruption leads the sufferer to seek relief by rubbing and scratching the affected surface. The ease obtained in this way is only temporary, however, and in a short time the itching and burning return with greater intensity, the scratching is repeated, and, if no relief is given by medical means or a cessation of the cause, an inflammation of the skin proper—an eczema—may be produced, which will often persist a long time and prove very resistant to treatment.

I may be permitted to digress here for a moment to call attention to the frequency with which this very obstinate and troublesome disease is the result of neglect of very trivial ailments. An outbreak of prickly heat, or nettle-rash, or a simple chafe, if neglected or improperly treated, is often followed by an eczema lasting months or years—nay, which not infrequently attends the individual throughout life. Dermatologists see cases almost daily in which the ounce of prevention, properly applied, would have far outweighed many pounds of cure.

The use of flannel next to the skin, especially during hot weather, is the principal avoidable cause of prickly heat. Flannel clothing ought at no time to be worn directly in contact with the skin.

Prickly heat is often greatly intensified by improper methods of treatment. Hot drinks or other sudorific remedies internally and irritant local applications nearly always make the disease much worse.

An eruption very similar in appearance to prickly heat sometimes affects children when teething, or when suffering from an attack of acute indigestion or similar complaint. This is a fine nettle-rash. It is not limited to the parts covered by clothing, and not rarely attacks the palms of the hands and soles of the feet. The itching is usually more intense than in prickly heat. The eruption appears and passes away suddenly, and may often be made to disappear by an emetic or brisk purge.

It is a popular fallacy that the eruption of prickly heat is salutary, and that no effort should be made to cure it for fear of "driving it in" and causing some other serious disease. There is no need to fear any ill consequences from a rapid cure of the complaint. The danger is, rather, as already pointed out, that if neglected it will develop into another and much more obstinate disease.

Prickly heat need rarely cause much difficulty in treatment. The following measures will usually succeed in promptly relieving the intense irritation and restoring the normal condition of the skin:—

The dress should be light, all flannels and impervious articles of clothing being removed. Cool baths should be taken often enough to remove the perspiratory secretion before it decomposes, and to keep the skin cool. After the bath, the skin should be carefully dried with a soft towel, and the affected surfaces powdered with starch-powder, or a mixture of starch and oxide of zinc (Formula 2), or carbonate of zinc and orris-root (Formula 3).

Lotions containing alcohol, as cologne-water or bay-rum, may also be used when the outbreak is local, following the lotion with one of the powders. Formula No. 4 will often be of good service. All powders used

should be perfectly smooth and contain no gritty particles. Preparations containing sulphur should be avoided, as they are more likely to increase than to allay the irritation.

If the itching is excessive, lotions containing one to two drachms of bicarbonate of soda to the pint of water (1 to 100) may be applied with a soft sponge and allowed to dry on the skin. Ointments must not be used, as they nearly always aggravate the complaint.

If the eruption covers the entire surface, alkaline baths, containing two to four ounces of carbonate of soda to the bath, or bran baths, may be employed, and will rarely fail to give at least temporary relief from the excessive itching. A bran bath is prepared by inclosing from five to six pounds of bran in a thin muslin bag and steeping it in the bath for fifteen to twenty minutes before using the bath. The bag should be occasionally kneaded and squeezed, in order to diffuse the mucilaginous contents throughout the water. Gelatin and starch baths, containing one to two pounds of gelatin or one pound of starch to the bath, are also often valuable aids in the treatment. After each bath the skin should be carefully dried without friction and dusted with starch, as above directed.

The causes of the disease should be avoided, if possible.

ANATOMY AND PHYSIOLOGY OF THE SEBACEOUS GLANDS.

THE sebaceous glands are lobulated glandular organs found in all parts of the skin except the palms of the hands, soles of the feet, and the dorsal surfaces of the third digital phalanges. Special varieties of these structures are Tyson's glands on the glans penis, the Meibomian glands, and the ceruminous glands of the external meatus. They are nearly always in connection with a hair-follicle. If the hair is thick, as in the scalp or beard, the glands seem to be appendages to the hair-follicle, and discharge their secretion into the follicular canal. On the other hand, the fine hairs seem to be merely appendages to the gland, the duct of the latter opening directly upon the surface, and the hair-shaft passing out through the gland-duct. The glands in the tegument of the glans penis are not connected with hair-follicles.

The number of sebaceous glands in the skin of the adult is estimated by Bulkley as at least six hundred thousand. Their size varies extremely, measurements having been given at $\frac{1}{600}$ to $\frac{1}{36}$ inch in diameter.

The secretion of the sebaceous glands consists of epithelial *débris*, cholesterin, fat, and fat-crystals. Its function is probably to keep the skin and hair soft and pliable, and to limit absorption and evaporation.

DISEASES OF THE SEBACEOUS GLANDS.

THE diseases of the sebaceous glands may be divided into functional disorders and structural lesions. The latter frequently arise from the former.

I. FUNCTIONAL DISORDERS OF THE SEBACEOUS GLANDS.

SEBORRHŒA—EXCESS AND ALTERATION OF THE SEBACEOUS SECRETION.

Seborrhœa appears under two forms,—Seborrhœa sicca and Seborrhœa oleosa. The former is generally found upon the hairy scalp and the trunk, while the latter is often localized upon the face.

Dry seborrhœa of the scalp is frequent in infants, in whom the head is covered with a more or less thick yellowish or brownish crust, under which the skin is dry and of the normal color, or slightly hyperæmic.

In the adult, seborrhœa of the scalp usually appears in the form of a furfuraceous desquamation, popularly known as "dandruff." In some cases, however, the scales are massed together in a firm layer, under which the skin is frequently reddened. When seborrhœa of the scalp lasts for some time it usually causes loss of the hair. It is probable that by far the majority of cases of early baldness are due to neglected or improperly treated seborrhœa; hence the importance of early attention to this apparently insignificant affection.

Upon the chest and back, seborrhœa generally appears in the form of roundish or irregular red patches,

covered by a layer of loose, whitish, greasy scales. Such patches are often found upon the sternal region, and may easily be mistaken for psoriasis.

Seborrhœa oleosa is almost exclusively limited to the face, especially the nose and cheeks. The skin of these parts is smooth, oily, and shining. Dust rapidly accumulates on the oily surface, and the affected individuals find it almost impossible to keep clean.

The causes of seborrhœa are not well known; but it is often an accompaniment or a consequence of continued fevers, syphilis, tuberculosis, or general anæmia. In many cases no reason for its existence can be discovered.

The diagnosis of seborrhœa rarely presents any difficulty. At times, however, it bears such a close resemblance to some other common diseases as to render a careful examination necessary in order to come to a positive decision.

The diseases with which seborrhœa is likely to be confounded are eczema, psoriasis, and ringworm.

In eczema there is always more redness of the skin and greater itching than in seborrhœa. There is also generally, at some stage of eczema, serous discharge, which is never present in seborrhœa.

In psoriasis, the scales are dry, silvery white, and seated upon a bright or deep-red, slightly-elevated base, with a sharply-defined margin. In seborrhœa the scales are usually dirty-white, grayish, or yellowish, and greasy to the touch. The border between the affected and normal skin is not well defined.

The small patches of seborrhœa upon the chest sometimes resemble ringworm. Here the microscope will generally decide the nature of the affection by revealing the spores or mycelium of the fungus of ringworm.

The treatment is principally local. If scales have accumulated to form crusts, these must be softened by some oily application. Sweet-oil and almond-oil are excellent for this purpose. Vaseline and cosmoline are unsuitable, as they do not saponify in the presence of alkalies (soaps), and hence are difficult to remove, especially from the hairy scalp. Fresh dehydrated lard answers much better.

The application of a hot, moist poultice for several hours often promotes the loosening of the scales. After thorough softening of the crust, the scalp or the part affected is washed with soap and water. The best soap for this purpose is the German soft soap (*sapo viridis*). This soap has a strong odor of fish-oil, which makes it very disagreeable. The odor can be very well covered, however, by dissolving the soap in alcohol and adding a little oil of lavender or bergamot. This constitutes Hebra's *spiritus saponis kalinus.* (Formula 9.) About a tablespoonful of this is poured upon the scalp, and, with the addition of water, smart friction produces a copious lather. The soap is washed out with clean water, and leaves the scalp clean, but usually with a tense sensation, as if the skin was stretched too tightly over the skull. A little oily application, such as vaseline, cold-cream, or almond-oil, will relieve this uncomfortable feeling. In mild cases the shampooing and inunction of the scalp with a simple unguent will after a time cure the disease; but in chronic cases something more will be required. Here some of the mercurial preparations, as Formulæ 10, 11, 12, or one containing sulphur, as Formulæ 13, 14, or tar (Formula 15), will be necessary. I have found carbolic-acid ointment, gr. xv to ℥j vaseline (1 to 30), to yield most excellent results.

The general treatment also demands attention. In

anæmic or chlorotic individuals, iron in the form of pills of the proto-carbonate (Blaud's ferruginous pills, Formula 16), or in combination with arsenic, as recommended by the late Sir Erasmus Wilson (Formula 17), is indicated. The tincture of the chloride, especially if made palatable (Formula 18), is also a most active chalybeate.

Chronic derangement of the function of digestion is also often present in cases of seborrhœa, and requires appropriate treatment. In acid dyspepsia, I have often obtained excellent results from the administration of lime-water and calumba (Formula 19).

Many patients suffering with disorders of the sebaceous glands are subject to habitual constipation. In these cases, the best drug I have used is cascara sagrada. I generally prescribe the cascara cordial prepared by Parke, Davis & Co., and have always obtained excellent results from its use. Its agreeable taste renders it a very desirable medicine. It is not objected to by the most fastidious patients. The fluid extract not rarely gripes and nauseates. I have never known the cordial to produce these effects. It should be given in teaspoonful-doses once or twice a day, until one daily evacuation is regularly produced. In dispensary practice I have used with satisfaction for a number of years a combination of sulphate of magnesia and iron (Formula 20).

COMEDO.

Comedones are small, solid elevations of the skin caused by the retention of the sebum in the gland-ducts. They can be squeezed out of their seat by lateral pressure, and appear as short yellowish or whitish fatty plugs, with the outer extremity of a blackish color, known in the vernacular as "black-

heads," or "flesh-worms." They are found in greatest numbers upon the face, chest, and back. They are unaccompanied by inflammation.

Neglect of cleanliness is the most frequent cause of comedones. They are most frequent in young persons between the ages of twelve and twenty-five. At times no cause can be discovered. The diagnosis can never present any difficulty.

The treatment of comedo is simple. The sebum plugs must first be expressed from the gland-ducts. This can readily be accomplished by means of a comedo extractor, or a watch-key. The opening of the key is placed directly over the black extremity of the plug and direct downward pressure made, when the plug is usually easily extruded. Then the skin is washed with soap and water, *spiritus saponis kalinus* (Formula 9) being an excellent form in which to use the soap. Afterward, a mild, stimulating application should be made to the skin in order to produce contraction of the calibre of the gland-duct and prevent re-accumulation of the secretion in it. For this purpose a mild sulphur or mercurial ointment (Formulæ 11, 13) is useful. Van Harlingen recommends a combination of kaolin, glycerin, and vinegar (Formula 21), which I have used with some success.

Should the frictions with soap produce irritation and desquamation of the skin, they may be intermitted for a few days, and a soothing ointment, such as oxide-of-zinc ointment, or cold-cream with starch (Formula 22), applied in the interval. When the irritation has subsided, the soap-friction must be resumed.

If the patient is anæmic or debilitated, the administration of iron, in the form of acid tincture of the chloride (Formula 18), is indicated.

MILIUM—SMALL RETENTION-CYST OF SEBACEOUS FOLLICLE.

This occurs in the form of small, white or pearly, elevated papules, principally situated about the eyelids. They are very superficial, being merely covered by epidermis. They are not likely to be mistaken for any other disease.

The best treatment is electrolysis. An electrolytic needle inserted into the growth or passed through its base, and the circuit closed with $\frac{1}{2}$ to 1 milliampère current for a minute, will usually be effectual. After a few days the papule falls off, leaving no scar. The slightly pigmented mark which remains gradually fades out. Simple puncture and expression are also often effectual.

STEATOMA—SEBACEOUS CYST; WEN.

Wens are retention-cysts of the sebaceous glands which frequently grow to considerable size. They may occur on any portion of the body where there are sebaceous glands, but are most frequently found on the scalp, face, neck, and back.

The diagnosis between steatoma and lipoma is sometimes difficult. Puncture with an exploring-needle or bistoury and compression will, however, disclose the contents of a steatoma and clear up the diagnosis.

The treatment consists in extirpation of the entire gland. Incision and expression of the contents of the sac may succeed, if the interior is thoroughly cauterized with lunar caustic. Small cysts may also be destroyed by electrolysis.

Anæsthesia may be produced by injecting a few drops of a 4-per-cent. solution of hydrochlorate of cocaine along the line of incision.

ASTEATOSIS—DIMINISHED SECRETION OF SEBUM

This occurs only in conjunction with other pathological conditions; most markedly with xeroderma. Persons whose hands come in frequent contact with alkalies, alcohol, ether, etc., often suffer from an artificial asteatosis, *i.e.*, the sebaceous matter is properly secreted, but is immediately dissolved in the chemical.

The treatment consists in supplying fat to the skin, by means of frictions with lanolin, cold-cream, almond-oil, etc.

II. Structural Diseases of the Sebaceous Glands and Peri-follicular Tissues.

ACNE.

During the period of puberty many of the organs of the body take on a new development. The sebaceous glands of the skin participate in this growth, and, as a consequence, a greater or less degree of functional disturbance of these organs is likely to result. The most common form of this functional disturbance consists in an alteration in character and quantity of the sebaceous secretion. The sebum secreted is thicker and is not so readily extruded from the gland-ducts. These latter become filled with little plugs of the secretion, which distend the ducts, and thus produce small papules, with sometimes a slight depression of the summit, which is colored black or brown. This little spot of color is the mouth of the duct filled with the secretion, and the discoloration depends upon the deposit of dirt,—dust, carbon, etc., which has adhered to the end of the greasy plug, as has already been described.[1]

This is the first stage, in the vast majority of in-

[1] See *ante*, p. 19.

stances, of the disease known as acne. The French writers term it acne sebacée; while in the English and German literatures it is known as comedo (plural, comedones). In this stage, acne is a purely functional affection; if we remove the accumulation of sebum in the glands and gland-ducts and change—by appropriate treatment—the altered character of the secretion, the parts resume their normal condition and the disease is at an end.[1] If, on the other hand, inappropriate or no treatment be adopted, the disease goes on to the next stage,—that of congestive or inflammatory acne. Here, we find, in addition to the merely functional disturbance of the glands, a structural lesion—inflammation, with its consequences,—pus-formation and hyperplasia of connective tissue.

The following sketch traces the evolution of an acne papule from its stage of comedo: The walls of the gland-duct and the immediately surrounding connective tissue become compressed, disturbance of the circulation and nutrition within a limited area take place, and inflammation follows. At this stage the papule is bright-red and painful, usually still showing the black point of the comedo at its summit. The inflammation may now subside and resolution occur, but usually the process goes on to pus-formation. A little drop of pus appears in the centre of the papule, which, if evacuated, is found to surround the plug of inspissated sebum, the original cause of the trouble.

If the disease is allowed to go on without appropriate treatment, that form of acne known as the indurated or tubercular acne results. Considerable new formation of connective tissue (inflammatory hyperplasia) takes place, and those unsightly physiognomies so often seen

[1] See page 20.

in young men and women between the ages of eighteen and twenty-five result. There are dark-red blotches with firm, brownish nodules, from a split pea to a small bean in size, with angry-looking pustules scattered here and there over the face, the latter being particularly numerous on the forehead and cheeks.

Causation.—Errors in diet, excessive indulgence in or abstinence from sexual pleasures, masturbation, constipation, dyspepsia, eating particular articles of food, such as butter and cheese, have all been accused as causes of common acne. In very many individuals neither of these conditions, nor even a number of them combined being present, produce the disease; in others the disease appears in the absence of these various supposed causes.

Although no single functional disturbance or structural alteration of any internal organ can be held strictly accountable for the causation of acne, the disease cannot be attributed exclusively to external causes.

An epigrammatic professor of New England has tersely given the cause of acne in the following proposition: "The country girl washes her face with soap, and does not have acne; the city girl abstains from the use of soap, and does." Like all epigrams, this is only partly true. In the majority of cases of ordinary acne the abstention from soap is doubtless the immediate cause of the disease. In other cases, however, this cannot be accused of being the cause.

Acne is so frequently associated with menstruation that every practitioner is familiar with the relationship between this skin disease and the uterine and ovarian functions. The writer thinks he has observed one form of acne which may be classified, and which he has ventured to term "menstrual acne." It differs from the

ordinary form of acne in being rarely distinctly pustular, the eruption coming out in the course of a few days preceding or at the beginning of the menstrual period, and frequently disappearing with the menstrual discharge, without proceeding to suppuration.

Acne vulgaris is usually aggravated during the menstrual period, but the eruption of new lesions does not cease in the interval, and pustulation is often very marked.

Some women have an eruption of acne papules during pregnancy, which disappears after the pregnancy terminates. The relation between cause and effect has not been satisfactorily explained. The ingestion of various drugs, as iodide or bromide of potassium, is frequently followed by acne; the disease disappears on the discontinuance of the remedy.

Workmen in tar and petroleum or their products not infrequently suffer severely from painful acneiform eruptions. Cleanliness and, if possible, cessation of exposure to the irritant vapors give relief.

The only disease liable to be mistaken for acne is the papulo-pustular syphilide. In this, however, the eruption of the lesions is usually acute, and it is not likely to be limited to the regions of the body usually affected by acne. When the syphilitic nature of the eruption is suspected, an inquiry into the history of the development of the disease will soon clear up any doubt.

Treatment.—Internal medication can usually be dispensed with in the treatment of acne. Where the condition of the stomach or bowels seems to demand it, a mild mercurial or saline laxative is probably an aid. In habitual constipation, cascara cordial, as directed on page 19, will often act very happily. Tincture of chloride of iron is always indicated when the congestion

is considerable, or where there is much pus-formation. In strumous or tubercular individuals codliver-oil is a useful adjunct to other measures.

A rigid restriction of diet is not necessary if the digestive function is properly performed. The consumption of fatty food, if digestible, should be encouraged. Hence, butter, fat meats, or salad-oil should not be prohibited. In cases of pustular acne, the administration of calcium sulphide in doses of $\frac{1}{10}$ to $\frac{1}{4}$ grain is highly recommended by some authorities. I have never seen any good result follow its use. The same is true of ergot, which at the present time enjoys considerable popularity as a remedy in acne. The fluid extract may be given in half-drachm doses twice or three times a day.

In some cases acetate of potassium (Formula 23) seems to exert a favorable influence upon the course of the eruption.

Arsenic, in doses of $\frac{1}{100}$ grain ($\frac{2}{3}$ milligramme) three times a day, is extremely useful in "menstrual acne."

The local treatment of acne is by far the most important, and in the majority of cases suffices for the cure of the affection.

The indications for the treatment are: (1) to remove the accumulation of sebum, (2) to remove the products of inflammation, and (3) to restore the normal functional activity of the parts.

The first indication is best met by expressing the plugs of sebum daily, by means of a watch-key. Select a key with a smooth, broad base and wide opening, and, placing it directly over the black apex of the papule, press the key down squarely upon the skin. A little pressure will force the plug of sebum out of the gland-duct. This should be done every night. Immediately

after, the face should be washed with warm water and soap, allowing the lather to remain on all night. The *spiritus saponis kalinus* may be used. In the morning the soap is washed off and the face is dusted with oxide of zinc, calamine, or simple chalk or starch powder. In simple cases, with a moderately thin epidermis, this is all that is necessary, and in three or four weeks the acne is cured. I have also had good results from the use of Eichhoff's resorcin soap.

In the cases which may, for want of a more definite term, be called "menstrual acne," excellent results can generally be obtained by the use of a lotion containing sulphuret of potassium and sulphate of zinc (Formula 24).

In cases where the epidermis is thick,—a so-called coarse skin,—the treatment should be a little more active. Here a mixture of sulphur and carbonate of potash (Formula 25) should be painted on with a camel's hair brush, after the expression of the sebum plugs, and allowed to remain on all night. It was first recommended by Zeissl, and is certainly a valuable combination. In the morning, after washing the face, one of the above mentioned powders, or a little oxide-of-zinc ointment, should be applied.

After a few days of this treatment, the skin becomes slightly reddened and scaly, and, in some cases, an uncomfortable sensation of tension or burning occurs. Then the sulphur application should be discontinued for a few days until the irritation has subsided, when the same course should be recommenced.

If there are many inflammatory papules or pustules, incision or puncture with a fine, sharp bistoury gives great relief and hastens the involution of the lesions. After the puncture the flow of blood should be pro-

moted by a hot-water douche. A basin is filled with water as hot as can be borne, and a large, soft sponge dipped into it and pressed to the face. This should be continued five minutes or so, and is best done at night before retiring. It is an especially valuable adjuvant to the treatment if the pus-formation is free.

In cases of indurated acne, the tubercles should be freely scarified, and, after the bleeding has ceased, mercurial ointment applied on bits of cloth or leather, and allowed to remain on all night. The tubercles may also be painted with a strong alcoholic solution of carbolic acid (1 part to 3 or 4 of alcohol) this being repeated every two or three days.

In rare cases the treatment above recommended is too irritating. A lotion of bicarbonate of soda (℥ij to Oj) [1 to 60] will sometimes reduce the hyperæmia. The lotion of sulphuret of potassium and sulphate of zinc (Formula 24), diluted with an equal part of water, is also useful in these cases. A lotion of resorcin (2 to 4 per cent.) is often especially beneficial.

ACNE ROSACEA.

Acne rosacea, or toper's nose, differs in its clinical features, etiology, and its treatment from the condition just described. Its subjects are usually individuals above the age of thirty; further, individuals who indulge to excess in wines or strong liquors—beer-drinkers more rarely have it. It also sometimes occurs in young people of defective cutaneous circulation, in whom it never gets so marked, however, as in the first class of cases.

Acne rosacea begins as a consequence of frequently recurring flushing of the face. The brandy-drinker, speaking generally, has a hyperæmia of a portion of the

face every time he takes a drink. The vessels gradually become permanently enlarged, perhaps increased in number, and, in consequence of the local increase in nutritive material, some connective-tissue hypertrophy takes place. The increased circulatory activity of the part is accompanied by numerous stases of blood in minute areas, which eventuate in small abscesses, the acne pustules, accompanying the area of vascular injection. In mild degree of acne rosacea, the process stops at the formation of diffused red patches. These cases are often diagnosticated as "chronic erysipelas." Of course, there is no disease properly so called. In cases of a more active type, acne pustules will be found scattered over the red base, upon which also may be noticed tortuous, dilated blood-vessels. In the most exaggerated condition, we find the nose much enlarged, lobulated, brown or bluish-red in color, and disfiguring the patient very much.

In the treatment of acne rosacea, the use of wine or spirits, if this is the cause of the disease, must be forbidden. In those cases where the rosaceous patches are due to deficient nutrition, the patient must be placed under better conditions. Locally, in the patches of diffused redness, the application of the alcoholic solution of carbolic acid, above recommended (1 part to 3 or 4 of alcohol), will generally give most satisfaction. Where there are tortuous and dilated veins in the skin, they must be slit up with a fine knife and a pointed pencil of nitrate of silver drawn through them to cause obliteration of their calibre. Where the connective tissue is much increased, a plastic operation is sometimes necessary to restore a respectable shape to the distorted nose. When pustules are present they should be opened with a bistoury and the pus evacuated.

In mild cases of rosacea, a wash of corrosive sublimate, (gr. j to ℥j) [1 to 500] of diluted alcohol, or of resorcin (2 to 4 per cent.), is sometimes all that is necessary.

Occasionally, the redness can be best removed by painting the skin with a solution of caustic potassa (ʒij to ℥j) [1 to 4], and immediately washing it off and applying oxide-of-zinc ointment. After a few days the zinc and potassium-sulphuret lotion (Formula 24) may be applied.

Dilated vessels may also be obliterated by means of electrolysis, using 1 to 2 milliampères of current and a fine needle. If the operation is properly performed the obliteration is permanent.

SYCOSIS.

The characteristic features of non-parasitic sycosis are inflammatory papules, pustules, and tubercles, each perforated by a hair and occupying especially the region of the beard, although the eyebrows, scalp, axillæ, and pubes may also be seats of the affection.

The following is the usual history of a case of sycosis: A number of painful reddish papules or pustules appear in the beard or moustache, the single lesions being each perforated by a hair. The skin around the papules or pustules is usually reddened and somewhat swollen and infiltrated. In some cases, however, the characteristic lesions remain perfectly isolated; no extension laterally of the inflammation taking place. The pustules are usually small, flat, or slightly elevated, with scanty contents which they show little disposition to discharge, unless punctured or broken by pressure or friction. There is often burning and exquisite tenderness to the touch; rarely severe itching. In

cases of long standing the pus has dried into crusts and scabs, under which the surface is frequently excoriated. At times there are broad, elevated, papillary masses—fungoid excrescences—bearing some resemblance to mucous patches. In other cases there are boils and deep abscesses.

As the disease progresses, the hair-follicles are destroyed, the hairs, at first still firm in their follicles, fall out, and a flat, shiny, reddened, or venated scar results, which often strongly resembles the cicatrix remaining after the involution of lupus. Recovery from the disease rarely takes place without appropriate treatment.

The etiology of the disease is not established. Wertheim believes the primary irritation to be due to a disproportion in size between the hair-shaft and the hair-follicle. Hebra and Kaposi attribute it to the after-growth of a new hair at the bottom of the follicle before the mature hair has been shed. The disease is sometimes caused by the extension into the hair-follicles of a more superficial dermatitis, such as eczema. At other times it is evidently due to the constant contact with the skin of an acrid discharge; for example, a catarrhal discharge from the nose, which is frequently accompanied by sycosis of the upper lip and the parts of the nostril studded with the fine hairs called vibrissæ. When the inflammation is once lighted up it is kept up by the movements to which the hairs are constantly subjected.

The form of sycosis under consideration is not contagious, is not caused by a parasite, and cannot be conveyed from one individual to another through the utensils or manipulations of the barber. It is not caused by shaving, as the most severe and persistent cases are found in persons who do not shave. It is not

very rare, the lighter forms constituting, perhaps, 4 to 5 per cent. of all forms of skin diseases seen in this part of the country. It is most frequently seen in individuals between twenty-five and forty years of age.

The pathology of sycosis has been shown by Robinson to be primarily a peri-folliculitis, progressively attacking the follicle itself. There is reason to believe, however, that the inflammation may not infrequently begin in the follicle and extend secondarily to the peri-follicular tissues.

The diagnosis of non-parasitic sycosis is comparatively easy if the salient features of the disease are borne in mind. Each papule or pustule is perforated by a hair, and the disease is essentially an inflammatory affection of the hair-follicle and the immediately surrounding structures. In fact, sycosis bears a nearer resemblance to acne than to any other skin disease. In acne the sebaceous glands and structures immediately adjacent are the seat of the morbid process, while in sycosis the hair-follicles and surrounding tissues are the parts affected. From the intimate anatomical relations of the hair-follicles and the sebaceous glands, it is evident that the two diseases must be closely-related morbid processes.

From eczema of the bearded portions of the face sycosis is differentiated by the absence of the characteristic features of the former disease. In sycosis there is usually no itching or discharge of sticky serum, which symptoms especially mark an attack of eczema. In eczema there is likewise more infiltration of the skin, and the inflammation extends beyond the borders of the beard, and may even involve the entire face; in sycosis the inflammation is limited to the parts covered by thick hairs. It should be remembered, however, that

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a long-standing eczema of the beard may result in, or, rather, be complicated by sycosis. Even the deep abscesses, furuncles, and fungous sores may sometimes be seen in cases of very intense chronic eczema in strumous individuals.

From parasitic sycosis the differentiation will be aided by a history of the case. The latter disease usually begins as a ringworm—tinea circinata—and the fungus, which is the cause of the disease, can usually be found without much difficulty in the scales and affected hairs with the aid of a good microscope. In this form of the disease the hairs also fall out much earlier than in the non-parasitic variety. The hairs are also dry, lustreless, broken off, and split at the broken end. When the inflammation extends deeper in the parasitic form, there are usually numerous deep and very painful abscesses, which give a knobbed appearance to the lower jaw. On opening these abscesses a mucous or muco-purulent fluid is discharged.

The pustular or tubercular syphilide should offer no difficulty in differentiating it from non-parasitic sycosis. I have, however, seen two cases where the two diseases were present in the same individual, and caused considerable hesitation in arriving at a conclusion. In these cases I found the sycosis especially obstinate; both had a catarrhal discharge from the nose, which kept up the irritation of the upper lip, where the disease was principally localized. In one of the cases the eyebrows were also affected by the sycosis. In syphilis the generalization of the eruption and the tendency to destructive ulceration of the lesions, when long continued, will enable the diagnosis to be made with little difficulty.

The prognosis of sycosis is favorable. It demands,

however, more personal attention from the physician in its treatment than almost any other skin disease. A neglect of certain precautions—to be presently pointed out—on the part of either physician or patient, will result in almost certain failure to cure the disease, and consequent disappointment to the patient and discredit to the doctor.

The important points to be insisted upon in the treatment of non-parasitic sycosis are four: shaving of the affected parts, puncturing all abscesses and pustules, the proper application of appropriate ointments, and epilation. I consider it of such importance that the diseased spot should be shaved daily, or every other day, that I decline to begin the treatment of a case unless this advice is followed. There is always strenuous objection on the part of the patient, who urges various reasons for not carrying out this procedure. It will be found, however, upon trial, that shaving—if the barber is expert and the edge of the razor keen—is not nearly so painful as the patient anticipates, and the rapid improvement which follows soon removes all objection to the practice. When there is considerable crusting and scabbing, the accumulated crusts are first softened by the use of sweet-oil, lard, simple ointment, or a poultice, and then shaving commenced. In order to facilitate the removal of the crusts, the beard can first be shorn with scissors. After the face has been shaven, all pustules, tubercles, papules, boils, and abscesses should be opened with a fine, sharp bistoury, and the discharge of their contents and of the blood, which flows pretty freely, encouraged by douches of hot water. This is best done by dipping a large, soft sponge in very hot water and applying it to the diseased surface, continuing this for five or ten minutes. When the bleeding has ceased,

some soothing ointment should be applied on cloths and bound to the parts.

Hebra's ointment, or the ointments of ammoniated mercury, calomel (℈ss–j to ℥j) [1 to 8 or 1 to 16], yellow oxide of mercury (gr. x–xx to ℥j) [1 to 24 or 1 to 48], or oxide or oleate of zinc will be found to answer the purpose. The irritation soon subsides, and, on daily repetition of this procedure, the face shows marked improvement in a few days. When abscesses and pustules cease to form, I generally direct the 5-per-cent. oleate-of-mercury ointment, and know no other application which gives such satisfactory results. An ointment composed of equal parts of Hebra's and mercurial ointments is also very useful. The diffused redness that remains can be made to disappear more rapidly by an occasional superficial scarification, and the application, twice or three times a week, of a solution of carbolic acid in alcohol (1 to 4 parts). The shaving must be continued for at least a year after the final disappearance of the eruption, for, upon allowing the beard to grow again, the disease is exceedingly liable to return.

In many cases of this disease it will be advisable, and will hasten the cure, to pull out the hairs from the inflamed follicles. It will be found that this procedure, if consistently carried out, shortens the duration of the disease very materially. It is, however, not so necessary in the non-parasitic as in the parasitic form, and it is very painful to the patient and trying to the practitioner.

In those cases where fungous vegetations occur, they may be destroyed by means of caustics or removed by the curette. It is only in very rare cases, however, that such severe measures are required. In most of the

cases coming under the notice of the physician in this country, the simple means briefly described will suffice for the cure.

In sycosis no internal remedies are requisite, unless there should be disturbance of function of some internal organs,—the digestive apparatus, for example,—when the appropriate remedies demanded by the case should be given.

ECZEMA.

GENERAL CONSIDERATIONS.

WILLAN and all other English dermatologists, until a very recent period, characterized eczema as a vesicular disease, accompanied by the discharge of a sticky, albuminous fluid. Other clinical manifestations of a pathological condition, apparently similar to that underlying the vesicular eruption, were classed as separate and distinct diseases. Thus, an itching papular eruption was termed lichen, or prurigo; a pustular eruption was impetigo; and an erythematous or a scaly eruption was an intertrigo, psoriasis, or pityriasis. While these names still have a place in dermatological nomenclature, they have at present, in most cases, a different signification to that possessed by them twenty-five years ago.

Hebra, to whom belongs the credit of freeing dermatology from the clogs of artificial classifications and a meaningless terminology, recognized the close relation of these various manifestations and gave to eczema a more comprehensive definition than was given to it by the English, French, or early German schools. According to this definition, eczema is an acute or chronic non-contagious inflammation of the skin, manifesting itself either in reddened or scaly patches, papules, vesicles, pustules, or fissures, characterized in many cases by the exudation of a colorless, or yellowish, sticky fluid, which dries into amber-colored or brownish crusts, and is accompanied by intense itching.

If we accept this definition of eczema, our conception

of the disease becomes at once much more clear and simple. We are led to pay attention to the pathological condition underlying the morbid process, rather than to the manifestations of the disease in any particular case.

It is probable that eczema is, in the majority of cases, due to external impressions upon the skin, *i.e.*, it is the effect of some local irritant influence, either chemical or dynamic. There can be little doubt, however, that a peculiar predisposition of the skin to take on eczematous inflammation is necessary before the influences mentioned will produce an eczema. Thus, in some individuals, the most violent scratching or friction, chemical irritants, or changes of temperature or moisture, will fail to produce an eczema, while in others, any of these influences, even in a mild degree, will produce an outbreak of the disease. It is not necessary to assume, however, that there exists a peculiar dyscrasia or diathesis, to which the term eczematous diathesis is applicable. The evidence which we have bearing upon this point seems to the writer to point to the opposite conclusion.

Although the writer is firm in the conviction here expressed, that eczema is mostly due to external physical impressions upon the skin, it is not intended thereby to exclude altogether affections of internal organs as predisposing, or even as exciting, causes of outbreaks of the disease. Disorders of the digestive organs, the liver, or kidneys, and disturbances of the nervous system, seem to have an etiological relation to outbreaks of eczema in some cases.

Hebra speaks of the frequent coincidence between eczema and menstrual anomalies. These menstrual eczemas, he says, are especially localized on the scalp,

face, or lips. In the course of pregnancy, also, eczemas frequently appear, generally in the earlier months, and continue, in spite of all treatment, to the end of gestation. These eczemas are usually localized upon the hands. Some women, who have repeatedly been pregnant, are able to determine the presence of pregnancy in themselves by the outbreak of the eczematous eruption on their hands. Th. Veiel reports an interesting case, in which the eczema appeared in the third month of the patient's third pregnancy, and continued until the termination of the puerperal period, when it disappeared without treatment. The eruption was limited to the extensor surfaces of the forearms, and recurred at five consecutive subsequent pregnancies.

Hebra also refers to the eczema occurring during or after lactation. Sterile women, too, are subject to recurrent eczemas, although these may generally be traced to some definite lesion of the uterus or ovaries. The writer has noticed a form of acute, generalized, eczematous eruption, not described by other writers, which occurs in association with laceration of the cervix uteri. The eruption extends over nearly the entire surface, is finely vesicular, and accompanied by the most intense itching, fever, and subsequent exfoliation of the epidermis. No treatment addressed to the cutaneous disease seems to be of any avail until the uterine lesion is remedied.

Climacteric eczema is referred to by Hebra, and Mr. W. Allan Jamieson, in his recent work, devotes some attention to this form. He says: "Usually the monthly loss has ceased when the eczema appears. This form exhibits a proneness to relapse and to the recurrence of eczema in certain definite regions for many years. More than three-fourths of the cases

occur on the scalp and ears. The extremities also may suffer, but the trunk is scarcely affected in any case. The scaly and weeping varieties predominate, in contrast to the pustular form, which attacks infants. Itching is well marked. From the commencement to the close there may be no more than a dry, pityriasis eczema, with some loss of hair, liable, however, to be transformed into the moist form by external or internal irritants."

Eczema is in all cases a curable disease. The predisposition of the skin cannot, however, be removed by any means at present known. Eczema is always liable to recur when the irritation is repeated. Hence, while the prognosis as to any individual attack is favorable, a permanent cure cannot be promised in any case.

If it be true, as stated above, that eczema is, in by far the larger proportion of cases, due to a merely local impression of greater or less intensity, it follows, as a matter of course, that local measures should suffice for its cure; and we find this to be generally true.

ACUTE ECZEMA.

For purposes of clinical description, eczema is divided into varieties determined by its duration, its localization, and the nature of the primary lesion. Hence, we may speak of acute and chronic, general and local eczema.

The varieties depending upon the nature of the primary lesion are the erythematous, papular, vesicular, and pustular. The acute form of these varieties will first be briefly described.

Acute erythematous eczema most frequently occurs in consequence of friction of two opposing surfaces of the skin, the action of heat or chemical irritants, or the

influence of moisture. Hence it is oftenest seen in the perineum and on the inner surfaces of the thighs in children and adults, and, in fact, wherever the surfaces of the skin are habitually in contact, especially if the effect of the friction is heightened by heat and decomposing secretions. This condition, known in the vernacular as "chafe," is often the source of great annoyance to both physician and patient, from its obstinacy.

Acute papular eczema is most frequently found on the forearms, hands, and feet, and is often due to the influence of high temperature of the air (as in aggravated cases of "prickly heat"),[1] or to persistent scratching. The writer has seen it not infrequently follow an outbreak of the small, papular urticaria, so often localized upon the back of the hand and fingers. The severe itching accompanying the urticaria causes the part to be rubbed and scratched until the temporary disturbance of nutrition has become prolonged, and what was at first simply an evanescent affection has become one of more permanence.

Papular eczema frequently runs into a stage of further development of the lesion, and becomes vesicular. In other cases the vesicular form is the one first developed. This is the old typical form of eczema,—closely aggregated, fragile vesicles, which, bursting, exude a sticky fluid that stiffens but does not stain linen. It is frequently seen upon the face, ears, and genital organs. There is often much serous infiltration of the skin, giving the part the appearance of erysipelas. There is, however, no pain or febrile disturbance, so marked in the latter disease. In erysipelas the skin is dark-red and shiny, while in eczema the color is much less deep.

[1] See page 9.

In eczema there is also burning, and, in most cases, intense itching.

Pustular eczema is most frequently seen as it affects the hairy scalp in children or the hairy regions of the face in adults. The pustular character is very frequently the expression of a depravement of the system.

Perhaps, in most cases of vesicular eczema, the vesicular character of the disease has disappeared when the physician is called. The vesicles have burst, and their contents have either dried into yellowish-brown crusts, or a red, weeping surface is exposed. This is the eczema rubrum of authors, and should be considered as a secondary form of the disease. When it occurs in parts where the skin is subject to much movement, as the flexures of joints, etc., fissures result, extending into the cutis, which are very painful sometimes. This is what is termed in the books eczema rimosum.

In a small proportion of cases, eczema in all or a number of its various forms will be found attacking the entire body or its larger surface. In such cases the vesicular and pustular forms will be found on the face, head, limbs, and genitals; the erythemato-squamous form will be found on the trunk; the flexures of the joints will be occupied by the fissured and weeping forms; while the papular variety will be almost exclusively localized upon the forearms and legs.

Acute eczema may be limited to certain portions of the body, or may extend over the entire surface. There are certain sites of predilection where it is often localized. These are the face, the genital organs, and the extremities.

Acute eczema oftener presents the vesicular char-

acter than do the chronic cases of the disease. It begins suddenly by an outbreak of small vesicles, aggregated in heaps, the eruption usually having arrived at its height in the course of forty-eight hours. In the most favorable cases, the involution of the process now begins, the contents of the vesicles are absorbed, and the dried epidermis cast off in whitish scales. In other cases the vesicles rupture and the contents dry upon the surface in gum-like crusts, which drop off in a few days, leaving a slightly reddened but otherwise normal surface.

The eruption of the vesicles is accompanied by redness and tumefaction of the skin, and subjective sensations of burning, tension, and, later, by itching. If the surface involved is extensive, the constitutional symptoms of fever may also be present.

This favorable termination of the affection is, however, exceptional. In the majority of cases relapses occur, or the action of local irritants prolongs the morbid process, and the disease, while undergoing certain clinical modifications, persists and eventuates in chronic eczema.

Acute general eczema, in which the disease attacks almost the entire surface of the body, is rather rare. In such cases the various primary manifestations will usually be present upon different parts of the surface, as above mentioned.

In acute eczema of the face there is usually great œdema of the skin, especially about the eyelids, which are sometimes swollen to such an extent as to prevent opening the eyes. The redness is also marked, and sometimes suggests the appearance of erysipelas, but the tense, shiny skin of the latter is not present in eczema. The surface is usually uneven, owing to the

presence of papules and vesicles. Upon the ear the vesicles are usually present in very great number.

The genital organs are affected with acute eczema in the male oftener than in the female. When the penis is attacked the swelling is enormous, and as it occurs very rapidly the patient is often greatly alarmed. The organ is thickly studded with innumerable little vesicles. In the course of a few days the swelling usually diminishes and the organ returns to its normal size. There is rarely any exudation upon the skin of the penis.

In eczema of the scrotum the swelling is also very great, and the vesicles soon burst and exude a large quantity of the characteristic sticky fluid of eczema. The decomposition of this exudation gives rise to an exceedingly disagreeable odor unless the most scrupulous cleanliness is observed.

Upon the hands and feet acute eczema appears in the form of numerous tense vesicles, varying in size from a hemp-seed to a small pea. At first there is a "furry" sensation, succeeded by itching. When there is much swelling the mobility of the fingers and toes is lessened, and in some cases entirely abolished, on account of the pain and tension.

The vesicles in eczema of the hands and feet are frequently very tense and resistant. They do not burst readily. Sometimes several run together to form a good-sized bleb. The itching is usually intense, and is often relieved only by fierce scratching.

CHRONIC ECZEMA.

In chronic eczema the typical characters presented by the acute are very often absent. The persistence of the morbid process gives opportunity for the production of various pathological conditions, such as excoriation,

scaling, crusting, and scabbing. The infiltration of the skin increases, the normal pliability of the integument becomes lost, and, on pinching up a fold, it resembles leather of various thicknesses, rather than living skin. In most cases there is considerable discharge and violent itching. When the disease continues a long time the skin becomes pigmented, especially in lines marking out the erasions produced by the finger-nails in scratching. Very often the lesions due to scratching extend down into the papillary layer, as shown by the dried blood-crusts which are found upon the eczematous patch.

Although chronic as well as acute eczema may affect the whole surface of the body or only a limited area, it is most frequently observed in certain localities, in each of which it presents clinical peculiarities requiring separate description.

In describing these various forms of the disease the practical needs of the physician and student will be kept in view.

Only those features will be noted which are necessary to arrive at an accurate diagnosis.

According to its localization, chronic eczema may be divided into—

1. Eczema of the scalp.
2. Eczema of the face.
3. Eczema of the trunk.
4. Eczema of the genitals and anus.
5. Eczema of the flexor surfaces of joints.
6. Eczema of the hands and feet.
7. Eczema of the legs.

Eczema of the scalp is most frequent in children, in whom it is usually present in the pustular form. It may also appear as the erythematous or squamous, the latter being the variety most frequently seen in adults.

It may occur in patches or uniformly distributed over the entire scalp. The crusts are usually thick, and yellowish, greenish, or brownish. They are formed of scales, pus, and the secretion of sebaceous glands. If strict attention is not paid to cleanliness, the material of which the crusts are composed undergoes decomposition and exhales a very disagreeable odor. The hairs are frequently matted together in the scabbing process, and the whole scalp may be covered by a large, firm crust, under which there are sometimes large collections of pus. When eczema of the scalp is neglected, especially in children, the head will frequently be found infested with lice. On the other hand, the irritation caused by the presence of lice is not rarely the starting-point for an eczema.

Eczema of the scalp sometimes extends beyond the hairy part of the head and invades the forehead, ears, and back of the neck, in form of a red band, covered by whitish, unctuous scales.

The hair sometimes falls out, but permanent baldness from eczema is extremely rare.

Enlargement of the post-auricular and post-cervical glands is nearly always present in eczema of the scalp, especially in children.

The table on the opposite page is a modification of one given by McCall Anderson, and presents the most prominent differentiating points between eczema of the scalp, pustular syphilide, psoriasis, ringworm, and seborrhœa. With its aid, and remembering other essential features of the disease, no difficulty ought to occur in making a diagnosis.

Eczema of the face is either limited in extent, or the entire face may be attacked by the morbid process. The affection may also be confined to the hairy portions of

Eczema.	Pustular Syphilide of Scalp.	Psoriasis.	Ringworm.	Seborrhœa.
1. Most frequent in children.	1. Usually in adults.	1. Rare in young children.	1. Almost limited to children.	1. In larger, irregular patches.
2. Entire scalp often attacked.	2. Most frequently in small patches.	2. Generally in small patches, with abrupt border.	2. In circular patches, extending peripherally, with dry, scaly centre and papular, vesicular, or pustular border.	2. Moderate itching.
3. Severe itching generally.	3. No itching.	3. Itching not severe usually.	3. Slight itching.	3. Scales greasy and seated upon a red, shiny, *not* exuding base.
4. Crusts, brittle and often thick; after removal scalp is red, infiltrated, excoriated, and exuding serum or pus.	4. Generally deep ulcers with abrupt edges and unhealthy base.	4. Scales dry, white, and silvery, seated on red, *dry*, slightly elevated base.	4. Hairs generally broken off, "like a stubble-field," dry and split. Parasite (*trichophyton tonsurans*) may be discovered on microscopic examination.	4. Hairs often fall out, and may not be reproduced.
5. Borders of patches gradually shading off into healthy skin.	5. Other signs of syphilis present.	5. Psoriasis on other parts of body, especially elbows and knees.	5. Contagious.	
6. Hairs healthy; not broken off or split.				
7. Not contagious.				

the face, *i.e.*, the beard, eyebrows, eyelids, and internal surface of the nostril. Eczema of the beard is a pustular inflammation around the hair-follicles, accompanied by burning, itching, sero-purulent discharge, and crusting.

If the inflammation extends deeply into the hair-follicles, a condition similar to that known as sycosis is established. In the latter the inflammation is limited to the hair-follicles and the peri-follicular tissues, while in eczema the inflammatory process may extend beyond the surface covered with hair.

In eczema of the eyebrows, the ciliary borders of the eyelids and the internal surface of the nostrils, the condition is principally a folliculitis. Little flat pustules occur, perforated in the centre by a hair. The hairs are not loose in the follicles, however, as in parasitic diseases, but are firmly attached, and cannot be removed without causing pain.

Unna has described a form of eczema under the name of seborrhœal eczema, which usually begins on the scalp, and may extend in patches over the entire body. It is scaly, has well-defined borders, and usually itches but slightly.

Upon the non-hairy parts of the face eczema usually appears in the form of the erythematous, pustular, or scaly varieties. The erythematous or erythemato-squamous generally appears upon the forehead, sides of the nose or chin, and is generally accompanied by intense itching.

The eczematous action upon the lips, the angle between the nostrils and cheeks, the eyelids, and the post-auricular angle is generally manifested by the presence of one or more fissures, which render movements of these parts painful, and from which the ec-

zematous fluid often exudes in considerable quantity. The post-auricular eczema is often very persistent. The same may be said of fissured eczema of the lips, which, when long continued, may cause considerable infiltration and hypertrophy of the labial margin. It is also often very painful; every time the mouth is opened some of the fissures are stretched or torn, and, in consequence, laughing, talking, eating, or any movement of the mouth causes much pain.

In children eczema of the face is frequent, and, when extensive, has given rise to the popular name "milk-crust." The scabs in this condition are formed by the drying of the exudate mingled with sebaceous secretion.

The only diseases likely to be mistaken for eczema of the face are ringworm and erythematous lupus. In the former the patches are always circular or with gyrate outlines, with a somewhat pale, scaly centre, and papular or vesicular border. In erythematous lupus the color of the patch is dark-red or brownish, the scales are greasy and adherent, and, when detached, fine prolongations are observed on their under surface.

Eczema of the trunk may occur in scaly patches from the size of a small coin to that of a hand. The patches are usually dry and scaly. When chronic there is often much infiltration. The itching is usually not very severe.

The disease is often localized about the nipples of nursing-women, constituting the troublesome affection known as "sore nipples." The nipple is red, swollen, with deep, very painful clefts (fissures) running around its base. The act of nursing causes the mother excessive pain. The disease is very obstinate on account of the difficulty of giving the parts complete rest.

Several years since, Sir James Paget described a form of eczema of the nipple which is liable to run into cancer of the breast. Microscopic examinations by Thin and Wile have shown that the disease is epitheliomatous at a very early stage, if not from the beginning. But the fact remains that, in an individual predisposed to cancer, any persistent irritation may determine the point where the disease will localize itself. In the opinion of the writer, cancer of the breast, or of any other part, may result as the direct consequence of the irritation of a prolonged eczema. It is especially advisable, therefore, that mammary eczemas should not be neglected, but should be cured as quickly as possible.

Sir James Paget gives the following lucid account of this disease as observed by him in fifteen cases:—

"The patients were all women, varying in age from forty to sixty or more years, having in common nothing remarkable but their disease. In all of them the disease began as an eruption on the nipple and areola. In the majority it had the appearance of a florid, intensely red, raw surface, very finely granular, as if nearly the whole thickness of the epidermis was removed—like the surface of very acute diffuse eczema, or like that of an acute balanitis. From such a surface, on the whole or greater part of the nipple and areola, there was always copious, clear, yellowish, viscid exudation. The sensations were commonly tickling, itching, and burning, but the malady was never attended by disturbance of the general health.

"I am not aware that in any of the cases which I have seen the eruption was different from what may be described as long-persistent eczema, or psoriasis, or by some other name, in treatises on diseases of the skin; and I believe that such cases sometimes occur on the

breast, and, after many months' duration, are cured, or pass by, and are not followed by any other disease. But it has happened that, in every case which I have been able to watch, cancer of the mammary gland has followed within, at the most, two years, and usually within one year. The eruption has resisted all treatment, both local and general, that has been used, and has continued even after the affected part of the skin has been involved in the cancerous disease.

"In practice the question must be sometimes raised whether a part through whose disease or degeneracy cancer is very likely to be induced should not be removed. In the member of a family in which cancer has frequently occurred, and who is at or beyond middle age, the risk is certainly very great that such an eruption on the areola, as I have described, will be followed within a year or two by cancer of the breast. Should not, then, the whole diseased portion of the skin be destroyed or removed as soon as it appears incurable by milder means?"

Prof. McCall Anderson gives a table of diagnostic points between Paget's disease and eczema of the nipple, which may aid in the differentiation :—

Paget's Disease.	Eczema of the Mamma.
1. Occurs in women over forty years of age.	1. Generally in women before the age of forty; especially during lactation.
2. Surface affected, in typical cases, of brilliant-red color, raw and granular-looking after removal of crusts.	2. Surface not so red and raw-looking, and not granular, but often punctated.
3. When grasped between the thumb and forefinger, superficial induration often felt, "as if a penny were laid on a soft elastic surface and grasped through a piece of cloth."	3. Infiltrated, but no induration.

4. Edge of eruption abrupt and sharply cut, and often elevated.	4. Edge not abrupt. Never elevated.
5. Very obstinate; and only yields to extirpation or other treatment applicable to epithelioma generally.	5. Obstinate sometimes, but yields to treatment appropriate to eczema.

Around the navel, especially in children, eczema is not infrequent. A circumscribed area of the skin becomes swollen and inflamed, and presents a weeping surface. The itching is usually very troublesome. The decomposing secretion often keeps up the irritation for a long time.

Eczema of the genital region presents differences as it appears in the two sexes. Occurring upon the male organs, chronic, like acute, eczema does not always affect both penis and scrotum at the same time. Upon the penis the inflammation will generally be noticed to occupy the summits of the transverse folds of integument when the organ is in the flaccid condition. To make this plain it is only necessary to seize the prepuce and draw it forward, when the folds will be smoothed out and the ridges will be seen as red lines running transversely to the organ. Along the inferior surface of the penis the skin will be more or less uniformly reddened and discharging. The mucous surfaces of the prepuce and glands are not attacked by the eczematous inflammation.

Eczema of the scrotum presents itself as a red, discharging, raw-looking surface, from which the epidermis seems to have been stripped off. The discharge is sticky, and has an extremely unpleasant odor. Sometimes the ridges of the corrugated scrotal skin are alone affected, and when this is put upon the stretch red lines are seen running across the diseased surface in various directions. In rare instances, where the disease has

lasted a long while, the skin becomes greatly thickened and infiltrated, producing an appearance resembling elephantiasis. In such cases the penis is often almost or entirely hidden by the hypertrophied scrotum, which rises up and surrounds it. The itching is usually very intense, especially at night.

In the female, eczema of the genitals is usually localized upon the greater labia, and may spread thence to the thighs or abdomen. The mucous membrane covering the lesser labia may also become inflamed. There is great swelling, puffiness of the labia, and increased secretion from the mucous membrane, very much resembling, at times, an attack of gonorrhœa. The itching is very annoying. A frequent cause of eczema of the genitals is diabetes; and it will always be well to examine the urine for sugar in cases of intractable eczema of these parts, in both sexes.

Eczema of the perineum and anus is also very troublesome. The itching is usually intense, and the affection very resistant to treatment. Fissures frequently exist, radiating outward from the anal margin, and cause intense pain at every fæcal evacuation. The fissures discharge an abundant quantity of serum, which rapidly undergoes decomposition and increases the irritation of the parts.

Eczema of the flexor surfaces of the joints is one of the most painful of this class of affections. The skin is greatly infiltrated, and deep fissures, extending down into the corium, run transversely across the patch, giving great pain at every movement of the joint. The eczema, when attacking the joints, is nearly always symmetrical. Not infrequently the pain, on motion, is so great that the patient refrains from moving the joint at all, keeping it immovable in the position where it is

most favorable, and often presenting the symptoms of ankylosis. The disease, when it attacks these localities, cannot be mistaken for any other affection.

Eczema of the hands and feet most frequently presents the vesicular form, the vesicles preserving their walls for a considerable period. When it is chronic, the fissured condition just described is often found at the flexures of the joints. Sometimes the pain from these is so great that motion of the fingers and toes becomes practically impossible; at other times the epidermis of the palms and soles becomes greatly thickened. I have seen the epidermis, in cases of eczema of the soles of the feet, fully half an inch in thickness.

Eczema of the legs is one of the most frequent local varieties of eczema. It occurs very often in connection with varicose ulcers of the lower extremities. It may appear as red, shiny patches, over which the skin is thickened and tense, or as a red, weeping surface, covered with scales and crusts. The itching is usually very intense. An artificial dermatitis, which may run into eczema, is not infrequently induced in this locality by scratching, in patients infested with lice.

In some cases of very persistent eczema of the legs the skin becomes very much thickened, hard, and even warty, and the condition known as elephantiasis is produced.

DIAGNOSIS.

The attempt has been made to give a sufficiently exact description of the various manifestations of eczematous inflammation of the skin, to render any detailed remarks on its differential diagnosis unnecessary. In discussing the local varieties of the disease the diagnostic features have also been pointed out. It may still be advisable, however, to recapitulate the salient symp-

toms of eczema, and contrast them with the diseases most likely to create doubt as to the diagnosis.

It will be remembered that, in eczema, the primary lesions are erythema, papules, vesicles, and pustules, and that usually there will also be one or more of the secondary lesions, or lesion relics: excoriations, scales, crusts, scabs, or fissures. As diagnostic features, must be mentioned the discharge—"weeping"—from the affected surface, and the itching, which is nearly always a symptom of the disease. It is also well to bear in mind that eczema produces no ulceration, and leaves, after disappearing, no scars.

The various forms of herpes present some resemblance to, and may be mistaken for, eczema. But in herpes there is no itching. If any subjective symptom is present at all, it is either burning or pain. In herpes the vesicles are large, aggregated in groups, and not disposed to break and form crusts. In shingles the distribution and arrangement of the vesicular groups are so peculiar that no doubt can arise.

That form of herpes commonly termed "fever-blisters" is so familiar to every one that it is not likely to be confounded with eczema. Sometimes, however, it becomes irritated, and runs into a true eczema.

Another disease which sometimes presents a great similarity to eczema is the itch. In this, as in eczema, the lesions are multiform,—papules, vesicles, pustules, and excoriations being present. In itch, however, the lesions are usually separated and scattered over the entire body, except the head and face, which are generally exempt. In eczema, on the other hand, the tendency is to remain localized in patches. In itch, the parasitic animal—the itch-mite—which is the cause of the disease, can also usually be discovered.

Psoriasis sometimes causes considerable difficulty in diagnosis; but if it is remembered that in this disease the affected surface is always dry, that the scales are silvery white and seated upon a sharply-defined red base, which readily bleeds when the scales are scraped off, that it is usually localized upon the extensor surfaces, and that the itching is less intense than in eczema, the differentiation can usually be made.

In lichen, the distinctly papular, dry, umbilicated lesions, with the characteristic localization and aggregation, will enable one to arrive at a diagnosis.

TREATMENT.

The treatment of eczema is naturally divisible into internal and external. Assuming that the physician is imbued with the general therapeutic principle that all disturbances of function of internal organs should be corrected, if possible, before or coincidently with beginning the treatment of the skin disease, I will proceed to the consideration of the internal remedies appropriate in the treatment of eczema. The first of these in importance and usefulness is arsenic. This remedy should not be given in acute cases, however; but in chronic papular or scaly eczema it often acts with almost specific power.

The form in which arsenic is given is of some importance. Fowler's solution (liquor potassii arsenitis) often produces nausea, on account of its taste. This tendency is easily overcome by giving the medicine in a tablespoonful of sherry wine. The proper dose of Fowler's solution, to begin with, is 3 to 5 drops three times a day. It should always be taken with or immediately after meals. The dose should be very gradually increased until the limit of physiological tolerance is

established. It is my practice to add one drop to the daily dose every third day until slight puffiness of the eyelids or redness of the conjunctivæ comes on. The dose should then be slightly diminished, and its effects on the disease noticed. It will generally be found that in scaly diseases improvement has begun even before the limit of tolerance has been reached. The medicine can be continued indefinitely without bad effects. No danger need be apprehended of "cumulative doses," arsenic being rapidly eliminated from the system.

Pearson's solution (liquor sodii arseniatis) is also used sometimes, but has no advantage, so far as I know, over the preparation above mentioned. It may be given in doses of ten drops, gradually increasing until the desired effect is produced.

De Valangin's solution (liquor arsenici chloridi) is one of the best of this class of preparations. It may be made extemporaneously by dissolving one grain of arsenious acid in one fluidounce of water, and adding half an ounce of dilute hydrochloric acid. This may be given in fifteen-drop doses in sweetened water after each meal. The dose can be increased by adding one drop to each dose every other day. The acid acts as a digestive tonic, which is often indicated in diseases benefited by arsenic.

Arsenic may also be administered in the form of pills. The *pilulæ Asiaticæ* have long been esteemed as an efficient preparation in psoriasis. They consist of arsenious acid and black pepper. Formula 27, suggested by Duhring, may be used.

The remedy next in value and importance to arsenic is iron. It is often of use in the acute form of the disease, the best preparation in these cases being the tincture of the chloride. In pustular eczemas,

syrup of the iodide is often of great value. Of the most unqualified value is codliver-oil. In so-called "strumous" children, where there is much formation of pus on the eczematous patch, the lymphatic glands enlarged, the skin dry and harsh, codliver-oil may be prescribed with the confident expectation of great improvement in the patient's condition.

Eczema has often seemed to me to be connected with the excessive consumption of tea, especially if too little nutritious food was taken. In such cases milk should be substituted for the tea, and endeavors made to induce the patient to increase the quantity of beef, eggs, and similar articles of food. Fresh air and exercise are important adjuvants to any plan of treatment.

In many cases of eczema a sharp purge is often of value as initiatory to the treatment. A full dose of sulphate of magnesia or calomel will often be useful. In other cases, the daily administration of a small dose (℥j) [4.] of sulphate of magnesia, either combined with sulphate of iron (gr. ij) [.12] or quinine (gr. i to ij) [.06 to .12], will aid the cure. I often prescribe a combination of sulphate of magnesia and tincture of chloride of iron (Formula 28).

Calomel in $\frac{1}{6}$ to $\frac{1}{2}$ gr. [.01 to .03] doses three times a day for 3 to 4 days is often of value. I very often prescribe the smaller dose in acute eczemas of children.

An excellent tonic prescription is one containing iron and phosphoric acid (Formula 29).

Acetate of potassium combined with fluid extract of taraxacum, according to Formula 30, will often greatly aid local measures in cases of acute eczema.

Local Treatment.—Of far more importance than the internal medication is the local or topical treatment of

eczema. The "management," as Dr. Bulkley happily styles it, of a case of acute eczema will often draw upon all the resources of the physician's art. It is not only requisite that he shall know what remedies to use, but he must know how to apply them and what effects to expect. It is often of more importance to know what not to do than to have a large formulary at command and use it with indiscretion.

In acute eczema, whether general or localized, almost any application may act as an irritant. The application of simple water may often act injuriously. Soothing measures must be exclusively employed. Among these the use of dusting-powders may be first mentioned. Combinations of oxide of zinc, starch, precipitated chalk, lycopodium, or some similar article will be useful. If the itching is very severe, black-wash, bicarbonate of sodium (gr. v–x to ℥j) [1 to 30–50], carbolic acid (gr. i–iij to ℥j) [1 to 200], or simply lime-water will give great relief. A lotion containing atropine (gr. j to ℥j) [1 to 500] will promptly relieve the itching, but is too dangerous for use, except over small surfaces.

Starch or bran-baths occasionally give great comfort, but it is better to defer their use in acute general eczema until the intensity of the inflammation has somewhat subsided. After the bath the eczematous surfaces should be dusted with one of the powders above mentioned, or some bland, fatty preparation (vaseline, sweet almond-oil, lanolin) may be applied. Under this treatment, with careful attention to the general condition of the patient, the disease usually quickly disappears. In other cases, however, the morbid process persists, and the disease becomes chronic. Here the treatment must be different. If the infiltration is not very great, some fatty application will be most useful.

The most valuable will be Hebra's ointment (Formulæ 6, 7), Lassar's paste (Formula 3), oxide-of-zinc ointment, vaseline with or without ½ to 1 drachm of calomel to the ounce (1 to 4–8). If the infiltration is considerable, these simple applications will not suffice. Remedies must be used which will hasten the exfoliation of the thickened epidermis and promote the absorption of the infiltration in the true skin.

These remedies are: mercurial ointment, calomel, ammoniated mercury, subnitrate of bismuth, tar, carbolic acid, and sometimes chrysarobin or pyrogallic acid. These may be used either in the form of ointment or lotion, the former in most cases giving the best results.

Methods of use are quite as important as a thorough knowledge of the medicament to be employed. Hence, it will be advisable to take up the treatment of the various local forms of eczema seriatim.

In most cases of eczema, but especially in eczema of the scalp, the first point to be attended to is the removal of the crusts. This is accomplished by covering the affected surface thickly with fresh lard, olive-oil or almond-oil, and putting on a flannel cap. After ten to twelve hours this application is to be repeated, if necessary, and when the crusts and scabs have been loosened they are washed off with warm water and soap. Castile soap answers best for this purpose. The soap must then be thoroughly washed out with clean water and the scalp dried with a soft towel. The diseased surface is now ready for the application of an ointment. One of the best is the white precipitate ointment of various strengths (℈j–℥ij to ℥j) [1 to 4–20], depending upon the amount of infiltration present. The red and yellow oxides of mercury (gr. iii–x to ℥j) [1 to 50–150] or calo-

mel (℥ss–j to ℥j) [1 to 4–8] may also be used. Tar may often be used with great advantage in eczema of the scalp. Its offensiveness can usually be modified by combining it with cold-cream, using the birch-tree tar by preference. Formula 32 is a useful combination.

Sulphur alone or combined with salicylic acid is also of value in some cases of scaly eczema of the scalp, and in seborrhœal eczema. Resorcin in 2- to 4-per-cent. ointment often acts very happily.

When eczema of the scalp is due to the presence of lice, or if these parasites are present, the part affected should be first saturated with petroleum, which promptly kills the lice, as well as their ova, or "nits," as they are called. It is unnecessary to cut the hair short in treating eczema of the scalp.

Eczema of the hairy parts of the face is often very persistent. The first indication, after removal of the crusts, is daily shaving, after which an ointment of yellow oxide of mercury, or of white precipitate, or one composed of equal parts of mercurial ointment and simple cerate, kept constantly applied, will bring about a cure. If these are too irritant, Hebra's oxide-of-zinc or oleate-of-zinc ointments may be tried. I have had excellent success with the last named.

The face is sometimes the seat of an erythematous or erythemato-squamous eczema which itches intensely, and is often very difficult to cure. A lotion containing oxide of zinc frequently gives the best results. Formula 33 is a good combination.

This is a much more agreeable application than an ointment, and often gives excellent results. An ointment containing yellow oxide of mercury and starch (Formula 34) is also very useful.

The hair-bulbs of the eyelashes and of the hairs on

the mucous surface of the nostrils—the vibrissæ—are sometimes the seat of a very persistent eczematous inflammation. In these cases codliver-oil is generally indicated. Locally, epilation, followed by the application of yellow oxide-of-mercury ointment (gr. x to ℥j) [1 to 50], or painting the diseased parts with a strong solution of nitrate of silver (℥i–ij to ℥j) [1 to 4–8] will often promote the cure. Dilute citrine ointment (℥i–ij to ℥j) [1 to 4–8] is also a good application.

Fissured eczema of the lips is a very troublesome affection. It is usually very persistent. When it lasts a long time the lips sometimes become thickened and ectropic. Solution of nitrate of silver (℥j to ℥j) [1 to 8] or caustic potassa (℥ss to ℥j) [1 to 15] followed by a stiff cerate, "lip salve," containing 1 drachm of calomel to the ounce [1 to 8] will in most cases produce a prompt cure.

Chronic eczema of the palms of the hands and soles of the feet generally yields promptly to appropriate treatment. If the epidermis is very much thickened it may be first softened by soaking in hot water rendered alkaline with carbonate of soda, or friction with Hebra's soap-tincture (Formula 10), and then an ointment made of equal parts of mercurial and Hebra's ointments continuously applied. The cure is sometimes very rapid, the infiltration and fissured condition of the skin disappearing as if by magic. Other local measures will rarely be needed.

Eczema of the dorsal and lateral surfaces of the fingers is, however, very troublesome. It often attacks laundresses, cooks, seamstresses, and grocers, the nature of whose occupations prevents the continuous application of a remedy. The itching is usually intense. It often requires applications of solution of caustic potassa

(℥j to ℥j) [1 to 8], followed by Hebra's ointment, or ammoniated mercury ointment.

India-rubber gloves or "finger-stalls" are often of great service in the treatment of these chronic eczemas of the hand and fingers. They act by confining the moisture, and thus macerating and softening the diseased epidermis.

Eczema of the joints is a very painful affection. The diseased skin is divided into little squares or lozenge-shaped spaces by fissures of greater or less depth, running in various directions. Every motion of the joint causes intense pain. It is often found in the popliteal region, and from its painfulness may interfere with locomotion.

Hebra's ointment alone, or combined, when there is much infiltration, with equal parts of mercurial ointment, will generally cause the disease to yield. Applications of the nitrate-of-silver or caustic-potassa solutions are sometimes necessary, however.

Eczema of the legs is often dependent upon a varicose condition of the veins of the part. In these cases proper support must be given to the dilated vessels before much good can be accomplished by applications directly addressed to the disease. If the case is very chronic and there is much infiltration of the skin, painting with the potassa solution (℥ss–j to ℥j) [1 to 8–15] or friction with Hebra's tincture of soap, or Bulkley's *liquor picis alkalinus* (Formula 35) should be used.

This should precede the application of Hebra's ointment, carbolic-acid ointment, or ointment of ammoniated mercury, carbonate of lead, oleate of zinc, or oxide of zinc. The ointment must be kept on by a well-applied flannel roller-bandage (made of "Domette" flannel). After the cure is complete, an elastic stocking should be worn to give the superficial veins proper support.

In eczema of the legs, the rubber bandage is often applied, but, unless there is considerable infiltration of the skin, it may do more mischief than good. The cases in which the rubber bandage is applicable must be carefully selected.

Chronic eczema of the scrotum often tests severely the endurance of the patient and the therapeutic resources of the practitioner. In some cases the eruption will rapidly disappear under a simple calomel ointment. In others, a tar ointment or a dilute solution of *liquor picis alkalinus* will have the desired effect. These are the cases which John Hunter must have had in mind when he said that skin diseases may be divided into three classes: those that sulphur will cure, those that mercury will cure, and those the devil himself cannot cure. The experience of most practitioners will probably place chronic eczema of the scrotum in the last-mentioned class.

Unless there is considerable infiltration of the skin, only mild applications, such as oxide of zinc, oxide of mercury, or Hebra's ointments, should be used. The itching yields better if a little tar or carbolic acid is added to the ointment. In some cases, where there is little thickening and redness, and only slight scaling, a weak sulphur and salicylic-acid ointment will prove successful. In obstinate cases the possibility of diabetes should be borne in mind and the urine carefully examined for the presence of sugar.

A variety of eczema which attacks the scrotum, perineum, and insides of the thighs, with a moist or scaly surface and a well-defined border, is not rarely seen. This is really a parasitic affection, and requires parasiticide treatment.

This disease is often very obstinate, and many reme-

dies may be used in turn with little or no good effect. The application of strong sulphurous acid once a day, as recommended by Bulkley, or of a solution of bichloride of mercury in tincture of myrrh, as recently advised by R. W. Taylor, will generally give good results. I have used, instead of the tincture of myrrh, the compound tincture of benzoin (Formula 36), which is, I think, better than the former.

Eczema of the nipple often yields quickly to an application of simple cerate containing one drachm of calomel to the ounce [4. to 30.]. In more obstinate cases the nipple may be painted with a pigment composed of one drachm [4.] of oil of cade to one ounce [30.] of collodion or liquor gutta-percha. This is also a useful application in fissured eczemas of the lips. Salol dissolved in ether and collodion (Formula 37) is also recommended in eczema and fissure of the nipple.

INFLAMMATIONS OF THE SKIN.

THE class of inflammations of the skin includes a number of affections which cannot be strictly termed inflammatory, but which are so near, and sometimes even overlap the border-line, that they cannot well be excluded. These affections are the erythemas, urticaria, and some of the drug eruptions.

The exanthemata are not skin diseases proper, but specific fevers with local cutaneous manifestations. They rarely come under the notice of the dermatologist, except in cases of doubtful diagnosis, and the cutaneous lesion scarcely ever calls for local treatment. They will not receive notice in this work, therefore, beyond pointing out the differential diagnosis where necessary.

In classifying the erythemata and urticaria with the inflammatory diseases, I am in accord with the expressed judgment of the representative body of American dermatologists.

ERYTHEMA.

Erythema is a redness of the skin due to excess of blood in the part. It may be transitory or lasting. The hyperæmia may be active or passive. In the former the skin is usually bright red in color, and the temperature slightly elevated. Sometimes there is also slight swelling, indicating exudation of serum, and, perhaps, cell-proliferation; in other words, inflammation. In passive hyperæmia the color is of a deeper red, brownish or bluish, and there is no local elevation of temperature. There may at times be slight hæmorrhages into the dermal tissues.

The erythemas are clinically divided into the *congestive* and *exudative*. In the former the redness is due merely to a temporary accumulation of blood in the part. In the other forms the redness is more permanent and accompanied by exudation and local alterations of nutrition. These are the exudative erythemas, and constitute the transition forms to the inflammations proper.

Congestive erythemas may either be idiopathic or symptomatic. The idiopathic forms are all produced either by traumatism, heat, or irritants acting on the skin. Thus, we have a redness of the skin from continued pressure upon any part, as, for example, under belts, girdles, garters, or upon the tubera ischii after sitting for a length of time. A semicircle of redness is frequently seen upon the forehead from a tight hat-band. Moderate chafing also exhibits an example of traumatic erythema; when it becomes more severe, it is apt to run into eczema. Light degrees of sunburn give examples of the erythema produced by heat.

A class of remedies termed rubefacients in works upon therapeutics give rise to the erythema from irritants. The ingestion of certain drugs also frequently causes an erythematous eruption.

A more important group of hyperæmias (congestive erythema) is that of the symptomatic. It is a common observation that many febrile, and also non-febrile, diseases are accompanied at times by circumscribed redness of the skin.

Typhus and typhoid fever, rheumatism, small-pox, and vaccinia may be accompanied by an eruption of rose-colored spots. They are important in a diagnostic point of view. In many of the diseases of children, especially disorders of the digestive organs, fugitive

hyperæmias may be observed. At times they may bear considerable resemblance to an eruption of measles or scarlatina.

In small-pox epidemics a peculiar hyperæmia is sometimes observed, occurring contemporaneously with the primary fever, *i.e.*, two or three days before the appearance of the eruption. This is, consequently, of considerable importance as a diagnostic point. An erythematous efflorescence appears upon the abdomen and upper part of the thighs, having the form, when the thighs are adducted, of a truncated pyramid with the base upward; the hyperæmia is bounded by an imaginary transverse line at the height of the umbilicus and another about two inches above the knees, and connecting the extremities of these lines by two others, running parallel with the loins.

The operation of vaccination—or, more properly, the vaccine disease—is sometimes accompanied by an eruption of rose-colored spots,—the so-called *roseola vaccina;* it is of no importance, and requires no treatment. Exceptionally, however, it runs into a dermatitis (erysipelas), and may then become a serious complication.

The *treatment* of simple erythema is merely symptomatic. An evaporating and cooling lotion, as cologne-water, or a lotion of bicarbonate of sodium, half an ounce to the pint of cool water (1 to 32) will be all that is required. When the hyperæmia approaches the inflammatory stage, as in erythema intertrigo (chafing), the following measures will give satisfactory results: The parts should be kept clean and as dry as practicable. Portions of the skin ordinarily in contact and rubbing against each other, as in the perineal region, between the buttocks, in the axillæ, under pendulous

mammæ, etc., should be kept separated by pledgets of lint, dusted with oxide of zinc or precipitated chalk. Where the redness is intense, and there is much heat or tingling, black-wash, applied on soft cloths and frequently renewed, is an admirable application. Formula 38 will often prove useful.

All the exudative erythemas may conveniently be grouped together under the collective title *erythema multiforme.* The sub-varieties are the papular, bullous, and nodose forms. A large number of intermediate forms have been described, but they are so manifestly merely stages of the affection that they will not be described as separate diseases. Erythema multiforme is characterized by its location, which is almost always on the backs of the hands and feet, extending in some cases up the arms and legs, and even in rare instances invading the entire body. The latter is especially liable to occur in the course of rheumatism, diphtheria, and other febrile diseases.

The papular form of erythema multiforme is the most frequent. The papules are small, dark red, sometimes shading into brown, and flattened. In a few days, usually, the reddish color gives place to varying shades of brownish, greenish, bluish, even black, these depending upon the exit of the coloring matter of the blood during the height of the process. The eruption is frequently the source of much alarm, but in itself has no significance. The papules are usually interspersed with erythematous spots, rings, gyrating lines (where two or more rings have run into each other), tubercles, and sometimes vesicles or large blebs. These sometimes simulate an eruption of pemphigus (*q. v.*).

The nodose form of erythema multiforme consists of circumscribed swellings of various sizes, from a bean

to a hen's egg, or larger, mostly situated upon the anterior surface of the leg, but also upon the face and other portions of the body. They are at first red in color, but afterward become bluish, greenish, or purplish, resembling very closely a bruise. They are painful and sore to the touch. They never suppurate. Sometimes the swellings closely simulate syphilitic gummata, but they never break down, as these latter formations do.

The *treatment* is simple. Pain or burning may be relieved by a cooling lotion. In the generalized forms of erythema multiforme the patient should always be carefully examined in order to determine whether the eruption is symptomatic of grave internal diseases. It has been observed in connection with rheumatism, with cardiac complications, pneumonia, diphtheria, and Bright's disease.

URTICARIA.

Nettle-rash is an acute eruption accompanied by tingling, burning, and itching.

The typical form of this eruption is a broad, flat, slightly elevated papule, with a bright-red border and a whitish or lighter red centre. This lesion is termed a *wheal*, and is the characteristic feature of the affection. The wheal is, however, not the only form in which the eruption of urticaria manifests itself, as the efflorescence may be composed in great part, or entirely, of small papules, linear elevations, or considerable tuberosities, from the size of a hazel-nut to a hen's egg. The size of the lesions clearly depends simply upon the amount of exudation and, perhaps, upon a greater or less predisposition in the skin to irritative action of this character. The eruption generally begins with great suddenness, is sometimes accompanied with febrile symptoms, and frequently disappears as suddenly as it

came. Itching and burning are characteristic symptoms of the eruption. Sometimes the top of one or more of the wheals is occupied by a vesicle. This simply depends upon the increased effusion of serum, and, beyond slightly changing the appearance of the eruption, has no significance. In rare cases, especially in delicate, irritable skins, pigmented spots, yellowish, greenish, or brownish in color, may remain for some time to mark the sites of the eruption.

Anatomically, the wheal consists of an exudation of serum into the Malpighian layer of the epidermis and the upper layers of the corium, with a limited annular hyperæmia due to a dilatation of the smaller vessels in the marginal zone of the wheal.

The *causes* of urticaria are both external and internal. In addition to the irritating influence of plants of the nettle family, and which has given to the affection one of its popular names, *nettle-rash*, the external, direct, or traumatic causes of urticaria are: the bites of the various insects,—lice, mosquitoes, fleas, bed-bugs,—contact with larvæ of various species of lepidoptera, and in some cases scratching or friction of the skin.

It is, however, only in persons with a peculiar irritable condition of the skin that urticaria of any great extent follows these influences. In such cases a single flea-bite may give rise to the most intense pruritus and general urticaria. In children it is frequently caused by the irritation of the bites of lice or bed-bugs. In these instances, remedies which do not comprise removal of the cause have no effect on the duration of the affection.

The most frequent causes of urticaria are internal or indirect, the eruption on the skin being probably a reflex effect of an irritation of some internal organ. In by

far the majority of instances it is due to irritation of the stomach or other portion of the intestinal canal. The ingestion of certain articles of food, especially shell-fish, pork, cheese, strawberries, and raspberries, or the administration of various medicinal agents, especially terebinthinate remedies, produce in certain predisposed individuals an abundant outbreak of urticaria. The eruption is frequently accompanied by symptoms of decided gastro-intestinal irritation, as vomiting and purging, sometimes choleriform in character. Not infrequently catarrhal jaundice is present in these cases, and seems to intensify the pruritus, probably by a direct irritation of the cutaneous nerves, due to the circulation of biliary matter in the blood.

Very often the urticaria can be ascribed only to a peculiar idiosyncrasy with reference to the articles of food causing the eruption, while at other times dyspepsia, or, rather, gastric irritability, seems to be present. In these cases the individual is compelled to limit himself to a very short diet-list, any deviation from which is sure to bring on an attack of acute indigestion and urticaria. This latter is especially liable to be the case in the frequently-recurring, almost chronic urticaria, so often seen in young children.

In persons suffering from the gastric irritability here referred to an eruption of little, pinkish, intensely itching papules frequently occurs, accompanying attacks of acute indigestion. This papular eruption is primarily nothing more than an urticaria, but in consequence of the continual scratching which it induces eczema results secondarily. The primary eruption is frequently not recognized, and hence the eczema is too often believed to be caused by the gastric derangement, leading to its irrational treatment.

If, in consequence of the administration of an alkali, or a small dose of calomel, the urticaria ceases, its cause being removed, the eczema generally gets well without further treatment, unless it has become chronic, when proper local measures should be instituted.

A number of functional or organic disorders of the female sexual apparatus are sometimes complicated by chronic urticaria, but as these troubles are usually accompanied by gastric derangement, the latter may, in most of the cases, be the exciting cause of the eruption.

Mr. Lawson Tait has recently reported a number of cases in which urticaria came on after abdominal section. Hebra first called attention to the frequent association of urticaria with uterine disorders. Scanzoni has likewise pointed out this coincidence.

In malarial regions intermittent urticaria, with or without febrile symptoms, is sometimes seen. Emotional disturbances, such as fright, anger, or great sorrow, appear not infrequently to stand in a causative relation to urticaria. Moreover, many well-defined nervous disorders are complicated with the same affection. It must also be confessed that cases occur for which no cause can be discovered.

The *prognosis*, so far as life is concerned, is favorable. If the cause of the disease can be discovered and removed, it usually requires no further treatment. Very often, however, it becomes chronic and persistent, either from non-recognition of the cause or because the latter cannot be removed.

The *diagnosis* is easy. Remembering the characteristic lesion of urticaria, and the subjective sensations of itching or burning always present, no mistake is liable to occur in differentiating this from other cutane-

ous diseases. To discover the cause is, however, as has been before pointed out, often most difficult and unsatisfactory.

The *pathology* of urticaria is one of those unsettled problems which abound not only in dermatology, but also in other special fields of medicine. Chemical examinations of the urine have shown that there is frequently a deficient elimination of urea and uric acid in cases of urticaria. It has been supposed by some that the retention of these excretory matters in the blood produces an irritating effect upon the peripheral nerves in the skin, and so gives rise to the development of the characteristic eruption. It has also been supposed that a similar irritation may be produced in consequence of the resorption of some products of decomposition in the alimentary canal. While both these theories may be to a certain very limited degree true, they explain but few of the cases.

The nature of urticaria has long been held to be neuropathic, but only the most recent discoveries in the physiology of the nervous system have furnished some sound and reasonable basis upon which to build a safe and satisfactory theory.

Without going into the history of the researches upon the vaso-motor nerves, it will suffice to say that it is now pretty generally admitted that there are two sorts of vaso-motor nerves, antagonistic to each other in their effects upon the vessels,—the vaso-constrictors and vaso-dilators; that these nerves originate in ganglia situated in the spinal cord and medulla oblongata, and that they leave the cord by the posterior nerve-roots. This important discovery contradicts Bell's law, that only afferent nerves are contained in the posterior nerve-roots, and demonstrates that these roots also con-

tain efferent nerves. Whether the vaso-motor nerves are really sensitive nerve-fibres, or whether these bundles contain an independent set of vasal nerves, is not yet known.

It has been further demonstrated that a reflex contraction or dilatation of the small blood-vessels is possible, and, furthermore, that certain systems of vessels act in a manner antagonistic to each other. This antagonism has been particularly studied in relation to the vessels of the skin and of the abdominal viscera. It has been found, namely, that when the constrictors control the abdominal vessels, the dilators act upon the vessels of the skin.[1] The latter is not to be ascribed to a passive dilatation in consequence of the increased blood-pressure, a complementary dilatation, so to speak, but active and due to a stimulant effect, possibly reflex, upon the vaso-dilators of the skin.

The circumstance pointed out by Stricker, and before referred to, that irritation of sensitive nerve-fibres causes dilatation of vessels, seems to point to a solution, namely, that certain sensitive nerve-fibres possess, in addition, the function of vaso-motors. The action of the vaso-dilators cannot always be due to reflex impressions, because the effect is produced upon a very limited section of the skin, and in other cases is produced at the site of the irritation. Examples of this are seen in the circumscribed production of urticaria in consequence of contact with nettles, bites of insects, etc.; but I cannot doubt that general urticaria, the accompaniment of gastric irritability, is due to a reflected impression upon the vaso-motor centres themselves.

[1] Stricker (Allg. Pathologie, p. 216) says: "There is reason to believe that in the nervous centres the constrictors for the vessels of the abdominal viscera and the dilators for those of the skin are more easily excited than their antagonists."

Treatment.—Notwithstanding the frequency of urticaria, the therapeutics of the affection are in a very unsatisfactory state. When the eruption is the result of irritating ingesta in the stomach or intestinal canal, an emetic or brisk purge will in most cases promptly relieve the affection. As an emetic, I decidedly prefer the sulphate of zinc (20 grains [1.3] in water), or fluid extract of ipecac given in a little syrup. Except in young children, however, such acute cases do not very often come into the hands of the practitioner, and almost never into those of the specialist.

When, however, the disease has become chronic, or is very frequently recurring, it gives a great deal of annoyance both to the patient and physician. The cause must be sought out and removed, if possible. It is frequently necessary to go over the patient's functions, one by one, to rigidly revise the diet-list, regulate the bowels, stimulate the action of the liver, if this seems necessary. The urine should be examined, and any abnormality of this secretion corrected, if possible. The saline laxatives and diuretics will find frequent application in these conditions. In cases where the eruption shows a regular periodicity in its recurrence, full doses of quinine sometimes have a prompt effect, and, if it fails, arsenic may be tried and sometimes found successful.

Recently, several of the later remedies have been tried and reported favorably. Thus 20-grain doses [1.3] of salicylate of sodium three times a day have been followed by prompt *cure* in a number of cases of more or less persistent urticaria. My own experience with this remedy is favorable. Schwimmer reports success in similar cases with $\frac{1}{60}$-grain [.001] doses of atropine sulphate. Still more recently, Pick has reported

brilliant results with pilocarpine. The eruption disappears as soon as the effect of the remedy upon the sweat glands becomes apparent. It may be used hypodermatically in doses of $\frac{1}{6}$ grain [.01], or half-drachm [2.] doses of fluid extract of jaborandi may be given. It promises to be worthy of trial. Some years ago I treated, experimentally, several troublesome chronic cases with drop doses of balsam of copaiba, which I had seen recommended in some journal. My success with this remedy was not uniform, however, and I should be disposed to give the jaborandi or salicylate of sodium the preference. The local treatment is sometimes a matter of importance. Any spirituous lotion, sol. carbolic acid 1 to 2 per cent., or black-wash may be used. I have found the least disagreeable antipruritic lotion to be one consisting of 1 drachm of benzoic acid to a pint of water [1 to 130].

SIMPLE INFLAMMATIONS OF THE SKIN.

The inflammatory diseases included under this title are divided into such as are due to the influence of mechanical violence (*dermatitis traumatica*), from chemical irritants (*dermatitis venenata*), from extremes of temperature (*dermatitis calorica*), from the ingestion of certain drugs (*dermatitis medicamentosa*), and those due to some profound neurotic or vascular disturbance (*dermatitis gangrenosa*).

Traumatic dermatitis is due to local mechanical injury. It includes inflammations from excoriations, bites and stings of insects, bruises, lacerated wounds, or prolonged pressure on a part.

The *treatment* consists primarily in removal of the cause, if still acting, and the application of such measures as will reduce the inflammation. Cold water, astrin-

gent lotions, and, if the deeper structures have been exposed, antiseptic dressings may be used.

Dermatitis from chemical irritants locally applied is not infrequent. Cantharides, croton-oil, tartar emetic, mercurial compounds, turpentine, arnica, mustard, petroleum, poison-ivy, poison-sumach, strong acids and alkalies, acrid secretions or discharges from wounds or ulcers may all cause dermatitis of varying degrees of intensity. All the different lesions characteristic of inflammation of the skin may be present.

The dermatitis from poison-vine or poison-sumach is relatively frequent in the spring and autumn. Contact with these plants produces an intense inflammation characterized by redness, great swelling, burning, and itching. There is usually an abundant eruption of vesicles, which break and pour out a profuse, sticky, serous secretion. The hands, face, and genital organs are most frequently affected.

The diagnosis is usually easy, erysipelas and acute eczema being the only diseases that can be mistaken for it. In the former there is absence of itching and vesiculation, and the fever is usually high. In acute eczema the outbreak is usually rarely so violent, except in young children, in whom the action of the poison can generally be excluded. Eczema also has usually a different localization from the poison-vine eruption, being rarely limited to the same portions of the surface as the latter.

There is a popular tradition that when an individual once suffers from a poison-vine eruption it will return annually for seven years, without renewed exposure. This is an error. Most people who suffer from the eruption every year contract the same after being again exposed to the cause.

The *treatment* must be directed to subduing the inflammation and relieving the subjective symptoms. In the poison-vine eruption, lotions of sulphate of zinc (ʒss to water Oj) [1 to 250], or of bicarbonate of soda (ʒj to Oj) [1 to 16], or black-wash generally give prompt relief. The first named is said by Hardaway to be almost a specific. Van Harlingen recommends fluid extract of grindelia robusta (ʒij to water ʒj) [1 to 4]. Tincture of lobelia with an alkali (Formula 39) is also highly recommended.

All of these lotions are to be applied to the affected surface on cloths kept constantly wet with the preparation. Drying-powders, such as prepared chalk, starch, or orris-root, may also be sometimes used to advantage.

The inflammation due to arnica or any of the other articles mentioned above generally yields quickly to mild astringent lotions or ointments (oxide-of-zinc ointment, Hebra's ointment) or dusting-powders of starch containing camphor, oxide of zinc, or calamine.

Dermatitis from extremes of temperature includes both inflammations from excessive heat (burns) and from extreme cold (frost-bite).

Burns are usually divided, according to the intensity of the acting cause, into three degrees. In the first there is redness, some pain and swelling. In the second degree vesicles or blebs form upon the inflamed skin, accompanied usually by severe pain. In the third degree, necrosis of tissue to a varying depth occurs. If the burn is very severe or of great extent, there is usually great depression of system and the patient may die of shock. In other severe cases the patient survives the shock, but succumbs to exhaustion, septic absorption, embolism, or pneumonia. The prognosis in all severe grades of burns is grave.

The *treatment* of burns of the first degree consists simply in relieving the pain. For this purpose nothing is superior to a lotion of bicarbonate of soda, applied on soft cloths which are kept constantly saturated. The same application is useful in burns of the second degree. The blisters should be punctured, and the denuded epidermis protected by absorbent cotton or lint. Dusting-powders of starch, carbolized oil, or a paste of carbolic acid, vaseline, and prepared chalk will be of value.

In the profound burns of the third degree, the removal of the necrotic masses should be promoted by poultices or warm-water dressings rendered aseptic with carbolic acid, or solution of sodium hypochlorite. The denuded surfaces should then be dusted with iodoform or dressed with boracic or carbolic-acid ointment. Care should be taken to prevent the formation of contractile or hypertrophic scars.

Frost-bite.—Like burns, frost-bites also manifest themselves in different degrees. The first degree, or erythematous frost-bite, is popularly known as chilblain. The parts most frequently attacked by chilblains are the toes and fingers. The nose and ears are also sometimes affected. The affected spots are bluish-red, slightly swollen, sometimes painful, but most frequently annoy by their persistent burning and itching. They often return in successive winters. Sometimes the epidermis is destroyed by rubbing or scratching and a superficial, painful ulcer remains.

In the second stage of frost-bite, blebs with serous or bloody contents form, under which a deep ulcer is often found. The healing of this generally takes place very slowly.

In the third stage, deep sloughs take place, which

usually require amputation of the affected extremity. If the necrotic masses are not removed by the surgeon, septic absorption is liable to occur, and the patient dies of septicæmia or pyæmia.

The *treatment* of acute frost-bite—that is, during the action of the cold—usually consists in rubbing the frozen part with snow or cold water until the circulation is re-established. In the author's opinion, however, it would be more appropriate to immerse the frozen part in *hot* water in order to restore promptly the circulation of blood. Afterward, astringent lotions of acetate of lead, sulphate of zinc, or alum may be used.

In chilblains, collodion painted on the spot is frequently of service. A dilute solution of nitric acid (℥ij to Oj) [1 to 8] is also recommended. A camphorated paste (Formula 40) may also be used.

A mixture of equal parts of ichthyol and oil of turpentine, painted on with a camel's hair brush, is highly recommended by a recent German writer.

In the second stage the sloughing bases of the blebs should be touched with a strong solution of nitrate of silver (ʒj to ℥j) [1 to 8] and afterward dusted with iodoform or powdered boracic acid. In the third stage, if amputation is not required, or is impracticable, the surface after removal of the slough must be dressed on antiseptic principles.

Dermatitis from the ingestion of certain drugs is rather more frequent than is generally supposed. A considerable number of medicines in daily use produce in some persons inflammatory eruptions which are often puzzling to the physician as well as annoying to the patient.

With regard to most of these drugs, only a comparatively small proportion of individuals who take them

are attacked. The reason for the susceptibility on the one hand and the immunity on the other is not known.

The following is a brief abstract of the cutaneous manifestations which have been noted after the administration of the drugs mentioned :—

Erythematous eruptions have been noticed after taking belladonna, hyoscyamus, stramonium, nitrite of amyl, chloroform, arsenic, quinine, opium, turpentine, cubebs, copaiba, antipyrin, and benzoate of sodium.

Urticaria has been observed after taking copaiba, quinine, opium, chloral hydrate, carbolic acid, arsenic, bromide of potassium, salicylic acid, and antipyrin.

The urticarial and erythematous eruptions are frequently combined in the same case.

Polymorphous erythema has occurred after arsenic, quinine, digitalis, copaiba, and bromide of potassium.

Vesicular and bullous eruptions sometimes follow the administration of arsenic (herpes zoster), cannabis Indica, iodide and bromide of potassium, quinine, salicylate of sodium, phosphoric acid.

Pustular and phlegmonous eruptions (pustules, boils, abscesses, diffuse phlegmons, erysipelatous inflammation) have been observed after taking iodide and bromide of potassium, arsenic, quinine, hyoscyamus, opium, chloral hydrate, digitalis, iodide of mercury, calomel, and pilocarpine.

Purpura has been noted after iodide of potassium, salicylic acid, quinine, chloral hydrate, and camphor.

The *diagnosis* of drug eruptions may cause some difficulty. The eruption from quinine sometimes presents a very marked resemblance to scarlet fever, at others to acute general eczema, and at still others to erysipelas. The first and last can generally be excluded by the absence of other symptoms, such as the high

temperature, prodromic fever, and sore throat in scarlet fever, and the burning pain and fever in erysipelas. The scarlatiniform quinine eruption sometimes begins with a decided chill, followed by high temperature and other symptoms of intense fever. The desquamation may present all the features usually considered characteristic of scarlet fever.

The *treatment* of the drug-eruptions consists in stopping the administration of the drugs causing them and meeting special indications as they arise.

Gangrenous dermatitis is a rare affection in which gangrenous patches appear upon different parts of the body, usually symmetrically. The patches are most frequent upon the fingers, but may occur on any part of the body. In a case observed by the author the affection was limited to the hands. The disease has been described under various names, such as local asphyxia of tissues, symmetrical gangrene, and Raynaud's disease. The causes are unknown. Most of the cases heretofore reported were in females, and some authorities believe that the sloughs were artificially produced. It is a well-known fact that sloughing patches have frequently been produced by the application of caustics for the purpose of malingering.

In some diseases of the central nervous system acute bed-sores occur. They are probably results of vaso-motor disturbances. In cases where injury to the main nerve-trunk of a limb has occurred, gangrenous patches are sometimes observed in the area of distribution of the injured nerve. Gangrenous dermatitis, limited to the point of inoculation, is not rarely observed after vaccination, especially with animal virus.

Electricity and stimulant applications are indicated, but little good can be promised from these measures.

ERYSIPELAS.

It is probable that erysipelas is in all cases due to the inoculation of a specific virus. There is not sufficient evidence that it can develop out of a simple inflammation without the presence of its specific cause. In nearly every case a careful search will discover some pre-existing lesion where the inoculation may have taken place.

The face, scalp, and extremities are the most frequent seats of erysipelas. In young infants a very fatal form is also liable to begin in the umbilicus.

The *symptoms* of erysipelas are: high fever,—the temperature frequently reaching 104° to 105° F. (40° to 40.5° C.),—headache, coated tongue, nausea and vomiting, and in severe cases, or in nervous individuals, mental disturbance (delirium).

The skin becomes painful, red, swollen, and shiny. If the case is mild these symptoms disappear in a day or two, and the normal condition of the skin and the general system is re-established. In severer cases the fever continues, the inflammatory area extends progressively, the skin becomes boggy, and vesicles or blebs appear upon the inflamed patch. The latter may burst and thick crusts form by the drying of the effused fluid. Local patches of gangrene may occur. In the face, the deformity produced by the swelling is often very great. The effusion into the loose connective tissue of the eyelids is often so extensive as to completely close the eyes. The ears become thickened, tense, shiny, and stand out prominently from the sides of the head. All of the affected skin is exquisitely sensitive, and the lightest touch or movement causes complaints of pain. The fever and gastric disturbances continue until the violence of the disease has reached its acme, after which the

symptoms progressively decrease. Unless sloughing occurs, the integrity of the skin is restored. At times, however, limited areas of solid œdema remain, especially about the lips, eyelids, and lower extremities. In some cases a predisposition to a return of the disease remains, and the patients are compelled to pass through an attack three, six, or even twelve times a year. Eventually, in many of these latter cases, a condition simulating elephantiasis arabum remains.

Recent researches (Koch, Fehleisen, Orth) indicate that the disease is due to a micrococcus, which has been isolated by Fehleisen. Pure cultures of this organism injected into healthy individuals have produced the disease.

The *prognosis* of erysipelas depends greatly upon the vital resistance of the patient. Persons of good habits, temperate, not run down by overwork or foregoing disease, and living amidst hygienic surroundings, are very likely to recover, even from severe cases. On the other hand, persons of depressed vitality, or of dissipated habits, especially those addicted to alcoholic excesses, frequently succumb to the disease. The erysipelas of the newborn is also almost always fatal. Erysipelas occurring as a complication of vaccinia is often of grave significance, because it is mostly an indication of a debilitated constitution in the vaccinee.

The *treatment* of erysipelas by the internal administration of tincture of chloride of iron is so often followed by marked decrease of the inflammation that I cannot doubt the good effects of this remedy. It is my practice to give it in half-drachm [2.] doses, well diluted, every two or three hours. Irritability of the stomach sometimes interferes with this treatment for a time, but if the administration of the medicine is persisted in,

and especially if a little dilute phosphoric acid and syrup of lemon are added, the stomach soon becomes tolerant of it, and it is retained. It is often useful to combine quinine with the iron.

Locally, a simple cold- or hot-water dressing will relieve the heat and burning pain. Lotions of bicarbonate of soda, of acetate of lead and opium, or of carbolic acid are also widely used.

The parenchymatous injection of a 2- to 3-per-cent. solution of carbolic acid into the periphery of the inflamed area, as at first recommended by Hüter, is highly thought of by some. Painting the inflamed patch with tincture of iodine is also believed to limit the spread of the inflammation. Collodion, either alone or holding in solution iodoform, has been used with success in the same manner. Recently the local application of white-lead paint has been highly recommended by Dr. Lewis, of New York.

FURUNCLE.

A boil is an acute, circumscribed inflammation of the skin, frequently extending into the subcutaneous tissue. It usually begins as a small induration, gradually elevating the skin into a conical prominence, tender to the touch, and accompanied by severe throbbing pain. The apex of the cone is the site of a small, yellowish pustule, and when this is punctured a few drops of pus escape. In some cases this terminates the morbid process, and the induration gradually disappears. These are called "blind boils." In the majority of cases, however, the inflammatory area extends to the size of a hazel-nut, or even an English walnut. In the course of a week the swelling becomes boggy in the centre, the summit breaks down, and a yellowish plug of dead connective tissue, covered with pus, is discharged. When

all the necrosed tissue has been thrown off the cavity fills up by granulation, and a small, irregular scar remains to mark the site of the boil.

The *causes* of boils are, in the majority of cases, external irritants. Thus, they frequently occur at the back of the neck, where they are often due to friction of a stiff, jagged collar. About the wrists they are often caused by a frayed shirt-cuff. Between the buttocks, or about the genitals, they are often due to acrid discharges or other irritants. They are not rarely accompaniments of pruritic skin diseases, and are then caused by the irritation of scratching.

Boils are often an external evidence of diabetes, and when, in any case, large numbers of boils occur scattered over the surface, it is well to bear this connection in mind.

It is a common saying that boils never come singly, but always in crops. This is in large measure due to improper treatment. The continued application of poultices, or irritant salves and plasters, is often responsible for the persistence of furuncular eruptions.

The *diagnosis* presents no difficulties.

The *treatment* of boils consists in free incision, followed by warm dressing or a poultice, and the internal administration of large doses (ɱxx to xxx) [1.3 to 2.] of tincture of chloride of iron. Quinine may often be added with advantage. A brisk purge may be given at the beginning of the treatment if indicated, but the persistent administration of laxatives, such as sulphur, cream of tartar, and similar medicines, is to be deprecated.

I have never seen any good effects from the use of sulphide of calcium or arsenic in boils, but often the reverse.

The incision of the boil should be made as soon as the diagnosis is certain. It relieves the congestion and throbbing pain, frees the way for the exit of the slough and pus, and leaves a fine, linear mark, instead of the irregular scar which nearly always remains if the boil has been allowed to break.

The poulticing or hot-water dressing should be continued only long enough to permit the engorged vessels in the areola of the slough to become depleted. Five or six hours is usually long enough. Afterward, the incision should be covered with a piece of lint smeared with carbolic-acid ointment.

ANTHRAX.

Carbuncle may be described as a diffused boil with multiple openings. In all essential particulars it is identical with the affection last described. The carbuncular swelling is broader, not so elevated as, and more firmly indurated than, that of a boil. Its surface is irregularly flattened. The necrotic masses are discharged through a number of openings, which have caused the top of a carbuncle to be compared to a sieve. There is usually severe pain, considerable fever, and often great depression of the system.

The *causes* are the same as those of furuncle.

The *treatment* differs in no respect from that of boils, except that it should perhaps be more energetic. In carbuncle of the lip, in which the prognosis is usually considered so very grave, early incision and the free administration of iron and quinine are imperative. To delay incising the swelling until pus is discovered by fluctuation, is merely tampering with the life of the patient. The dressing after incision should be actively antiseptic, in order to prevent septic absorption. Lotions of carbolic

acid (5 per cent.) or of mercuric bichloride (1 to 2000) should be kept constantly applied.

In addition to the administration of iron and quinine for their "specific" effect, the patient should have a liberal allowance of good food and alcoholic stimulants. This is especially important in patients of advanced age, who so often succumb to this disease.

DIFFUSE PHLEGMON.

Diffuse phlegmonous inflammation of the skin, also termed phlegmonous erysipelas, is properly a cellulitis. It is most frequently observed in the forearm and the neck. The morbid process consists in a necrosis of connective tissue, accompanied or followed by lymphangitis and dermatitis. The origin of the affection is probably always septic.

The disease begins with a chill, followed by fever. The patient sometimes has recurret attacks of chilliness, or regular periodic rigors. The affected locality becomes painful, hard, and swollen. In a few days the induration gives place to a boggy fluctuation. In some cases resolution may take place even at this time, but generally the connective tissue breaks down and is converted into an ichorous pus, in which numerous fragments of broken-down connective tissue are found.

If the affected surface is extensive the strength of the patient rapidly becomes exhausted, or symptoms of septic absorption come on. When the neck is the part involved, there is deep destruction of tissue, and the pus frequently gravitates into the mediastinum. In fatal cases, nephritis is an almost invariable complication.

The *treatment* must be conducted on surgical principles. Deep and extensive incisions, to afford free

exit to the necrosed tissue, and antiseptic dressings constitute the local measures. Internally, iron, quinine, and alcoholic stimulants are indicated in all cases.

MALIGNANT PUSTULE.

This is a localized gangrene due to the inoculation of the virus of splenic fever (*bacillus anthracis*). It usually appears on the hand, but sometimes also on the face. It begins as a red papule or tubercle, accompanied by itching or burning. A hæmorrhagic vesicle soon appears on the apex. The base becomes infiltrated to the size of a dollar or larger. This often undergoes necrosis, and, if the patient escapes general infection, leaves a scar after healing.

Lymphangitis, axillary abscess, and extensive sloughing of the tissues of the arm, chest, or neck are frequent complications, and often carry off the patient. The disease occurs especially in persons handling the hides of animals that have died from splenic fever. It is rarely observed in this country.

Absorption of septic matters sometimes occurs, during dissection or post-mortem examination, either through an accidental wound or through a slight abrasion. A localized inflammation results, which may eventuate in a lymphangitis and general septic infection. Oftener, however, a hæmorrhagic vesicle or a painful tubercle appears, to which Wilks has applied the term "verruca necrogenica."

The *treatment* consists in cauterizing the point of inoculation, and dressing the resulting sore with iodoform.

It is probable that the ill effects of septic inoculation can be prevented by the free use of a disinfectant solution of mercuric bichloride (1 to 1000).

HERPES SIMPLEX.

Simple herpes is usually divided into two varieties, which differ in their localization, as well as, probably, in causation. They are herpes of the face and herpes of the external genital organs.

Herpes of the face occurs most frequently on the lips, at the angles of the mouth, and upon the nose.

The eruption generally appears in the course of inflammatory or febrile diseases; hence, called "fever-blisters." It has no prognostic significance.

The eruption occurs in groups of pearly vesicles, which either dry up, leaving a thin, brownish scale to fall off, terminating the morbid process; or the vesicles are ruptured and a superficial painful erosion remains, which, if seated at the labial angle, may remain for a long time and cause considerable discomfort. At every movement of the mouth—in laughing, talking, or eating—the sore spot is disturbed, pain is caused, and healing is delayed.

An eruption of herpetic vesicles also occurs sometimes, on the mucous surface of the mouth, and may cause much annoyance.

The *treatment* is simple. The constant application of a mild calomel ointment, or, if the site of the eruption is moist, dry calomel dusted on, are all the therapeutic measures necessary. The disease tends to spontaneous recovery, and will always get well if not irritated or injured.

Herpes of the external genitals is rather a frequent affection. It occurs in both sexes, but is most frequent in males. It appears in little clusters of clear vesicles, situated either upon the cutaneous or mucous surface of the prepuce, or upon the glans. The tops of the vesicles soon become macerated and rubbed off, and

leave small superficial erosions, which sometimes are quite painful. The affection is frequently recurrent, breaking out in some individuals after every sexual intercourse; in others, it only appears after intercourse with certain women, indicating that something irritant in the vaginal secretions causes the eruption. In other cases again, no connection can be traced between the outbreak and a foregoing irritation.

When the affection occurs on the glans or mucous surface of the prepuce, or on the mucous surface of the labia, the *diagnosis* between herpes and the initial lesion of syphilis is often difficult, and sometimes impossible. In these cases a delay of a few days will usually clear up the diagnosis. The irrational treatment with strong caustics, to which every lesion on the genitals is subjected by so many physicians, is often the cause of uncertainty in making a diagnosis.

The *treatment* consists in the application of powdered calomel, oxide of zinc, or boracic acid. The vesicles should be protected from rupture by a pledget of lint or absorbent cotton. Where the tops of the vesicles have been rubbed off, and the eroded base exposed, iodoform dusted on produces rapid healing of the sores. Sometimes the tendency to recurrence of the affection can be diminished by the regular use of astringent lotions containing tannic acid, alum, or sulphate of zinc. Cleanliness, of course, is all-important.

In cases of redundant prepuce, circumcision will exert a favorable influence upon the relapsing tendency.

HERPES ZOSTER.

Herpes zoster, or "shingles,"[1] consists in an eruption of groups of large vesicles upon an inflamed patch of

[1] A corruption of the Latin *Cingulum*, a girdle; so called because in the typical form of the disease it surrounds the body, partly, like a girdle.

skin, generally limited to one side of the body, following the distribution of the peripheral terminations of the sensory branches of nerves, usually preceded by slight febrile symptoms, and more or less severe neuralgic pain.

It usually begins as follows: After a few days of slight febrile disturbance and neuralgia, sometimes very intense, an eruption of small, erythematous spots is noticed, in the centre of which there develop small papules. In a day or two the papules have changed into vesicles, which are often umbilicated like small-pox vesicles; the contents of the vesicles either dry into thin crusts or change into pustules, which sometimes leave slight scars, resembling somewhat the pits in small-pox. In from two to four weeks the crusts have fallen off, leaving the skin in its normal condition, or else the scars just referred to may remain to mark the site of the eruption. The pain is usually most severe and persistent in old persons. In children it is sometimes entirely absent, merely a slight soreness being felt.

Shingles is a self-limited disease, and occurs, as a rule, but once in a life-time.

The severe neuralgia may last weeks, months, or even years after the disappearance of the disease.

The *cause* of shingles is still a matter of discussion. The regularity of distribution of the eruption and the pain first led von Bärensprung to attribute it to nerve-lesions. Rare opportunities for post-mortem examinations in cases of shingles revealed hyperæmia, or inflammation of the corresponding cutaneous nerves in continuity, or some structural alteration in the ganglia. The cause of the disease in the nerves, in some cases, is traumatism: thus, zoster sometimes occurs in consequence of injuries to the cutaneous nerves or ganglia;

but, in the majority of cases, the neuropathy has been looked upon as spontaneous.

Contrary to most dermatologists, the writer believes that shingles should be classed with the acute infectious diseases. Points in favor of this view are :—

1. The strictly self-limited character of the disease, and its tendency to spontaneous recovery after a slightly varying duration.

2. The constant occurrence of more or less well-marked prodromic symptoms.

3. The character which it possesses, with the other specific diseases, of occurring but once (generally) in a life-time.

4. The uselessness of attempts to "cut short" the disease by therapeutic measures.

5. The well-attested quasi-epidemic character of its prevalence at times.

Erb, Landouzy, Gerne, and Kaposi have recently adopted this view, which was first distinctly proposed by myself, in a paper published in the *Archives of Dermatology* for July, 1877. No other theory so readily accounts for the pathogeny of herpes zoster.

Herpes zoster is localized according to the distribution of the cutaneous nerves; thus, in the face, it generally follows the distribution of the fifth or seventh, which latter receives sensory branches from the fifth. When it occurs in the course of the ophthalmic branch of the fifth, there are usually intense pain and inflammation of the eye, which may lead to disorganization of that organ.

Zoster may be conveniently subdivided into *facial*, where the distribution is as just described; *occipital*, following the ramifications of the third cervical, which gives off the occipitalis minor, auricularis magnus, and

subcutaneous colli. Among the other local forms, the *cervico-subclavicular* follows the distribution of branches of the fourth cervical, supplying the clavicular and subclavicular regions, shoulder, and upper part of the back.

Cervico-brachial follows the distribution of branches of the four lower cervical and two upper dorsal nerves, and occupies the neck, shoulder, or upper extremity.

Dorso-pectoral follows the distribution of the third, fourth, fifth, sixth, and seventh dorsal (intercostal) nerves. Before it breaks out, the malady termed intercostal neuralgia frequently exists for some days. It is the most frequent variety of zoster, and from it and the following division the name *zoster*, a belt,[1] is derived.

Dorso-abdominal zoster follows the distribution of the eighth to twelfth dorsal and first lumbar nerves, extending in a beautiful zone of vesicles from the spine to the linea alba.

Lumbo-inguinal follows the distribution of the first and second lumbar nerves and anastomosing branches, being most frequently confined to the inguinal region.

Lumbo-femoral follows the distribution of the second, third, and fourth lumbar nerves, occupying buttock, hip, thigh, or leg.

Sacro-ischiatic and *genital* occurs upon the penis, scrotum, or, in the female, the vulva and the perineum.

The *prognosis* in herpes zoster, so far as the eruption is concerned, is favorable. The neuralgia accompanying it is, however, frequently very persistent.

The *treatment* is extremely simple: protecting the vesicles from rupture by covering them with cotton-batting; dusting with a powder of starch or chalk containing morphine or camphor, to relieve pain. For the

[1] See note, p. 92.

same purpose, hypodermatic injections of morphine or atropine in the track of the nerve. Large doses of quinine have been recommended. Recently, phosphide of zinc, $\frac{1}{120}$ to $\frac{1}{60}$ grain [.005 to .01] three times a day, has been used, internally, in the form of a pill, and, it is asserted, with success in relieving the pain.

For the neuralgia, which is sometimes so persistent after the eruption has disappeared, arsenic, belladonna, or, locally, electricity may be used. In patients with broken-down health, the measures appropriate in such cases—good food, fresh air, exercise, iron and quinine—should be directed. The regular and proper use of the constant current promises most success in relieving the pain.

DERMATITIS HERPETIFORMIS.

This is a rare disease which has been described by several authors, but most thoroughly studied by Duhring, from whose writings on the subject the following account is condensed. The disease may appear in various types,—erythematous, papular, vesicular, bullous, pustular, or a combination of all of these.

In severe cases prodromata are usually present for several days preceding the cutaneous outbreak, consisting of malaise, constipation, febrile disturbance, chilliness, heat, or alternate hot and cold sensations. Itching is also generally present for several days before any sign of efflorescence. Even in mild cases slight systemic disorder may precede or exist with the outbreak. The latter may be gradual or sudden in its advent and development. Not infrequently it is sudden, one or more manifestation breaking out over the greater part of the general surface diffusely or in patches in the course of a few days, accompanied by severe itching or

A single variety, as, for example, the erythematous or the vesicular, may appear, or several forms of lesions may exist simultaneously, constituting what may very properly be designated the multiform variety. The tendency is, in almost every instance, to multiformity. There is, moreover, in almost every case a distinct disposition for one variety, sooner or later, to pass into some other variety; thus, for the vesicular or pustular to become bullous, or *vice versâ*. This change of type may take place during the course of one attack or on the occasion of a relapse; or, as is often the case, it may not show itself until months or years afterward. Not only multiformity of lesion, but irregularity in the order of development, is the rule, whether during an attack or later in the course of the disease.

Itching, burning, or pricking sensations almost always exist. When the eruption is profuse they are intense, and cause the greatest suffering. As in the case of eczema, before and with each outbreak, they become most violent, abating in a measure only with the laceration or rupture of the lesions.

The disease is rare, but is of more frequent occurrence than formerly supposed. The natural history of the disease is interesting. The process is in almost all instances chronic, and is characterized by more or less distinctly-marked exacerbations or relapses, occurring at intervals of weeks or months. This disposition to appear in successive crops, sometimes slight, at other times severe, is peculiar. Relapses are the rule, the disease in most cases extending over years, pursuing an obstinate, emphatically chronic course. All regions are liable to invasion, including both flexor and extensor surfaces, the face and scalp, elbows and knees, and palms and soles. Excoriations and pigmentation, diffuse and

in localized areas, are in old cases always at hand in a marked degree. The pigmentation is usually of a mottled, dirty, yellowish or brownish hue, and is persistent.

The *treatment* is symptomatic. The itching generally requires measures for its relief. Locally, the preparations of sulphur and tar may be used with good effect. Internally, arsenic in small doses, combined with iron and quinine, sometimes seems to be useful.

PSORIASIS.

Psoriasis is a chronic disease of the skin, characterized by the excessive formation of pearly-white scales seated upon a reddened, somewhat elevated base. On detaching the scales with the finger-nail, the denuded spot bleeds slightly.

The disease begins with punctiform, reddish spots, the tops of which become covered in a day or two with minute collections of white scales. These efflorescences are always multiple. They increase peripherally, and soon attain the size of a split pea, or lentil, when they look very much as if drops of mortar had been spattered upon the skin. The peripheral increase continues, so that the individual lesions become disks of the size of various coins. The individual patches may now run together, forming irregular-figured patches of various sizes.

The development of new points of efflorescence continues, so that in a case of some duration all the different-sized lesions may be present.

When involution of the patches occurs, the scales disappear from the centre, leaving a slightly elevated, more or less red or grayish, pigmented spot, while the scale-covered border may continue extending periph-

erally. The pigmentation finally disappears, leaving no scar to mark the site of the eruption.

The only subjective symptom attending an outbreak of psoriasis is itching, which is seldom very intense. In rare cases it is, however, exceptionally severe. It is most marked in the beginning of the disease.

The anatomical changes consist principally of an enormous hyperplasia of the Malpighian layer of the epidermis, with secondary hyperæmia and exudation in the corium, especially the papillary layer. The epithelial hypertrophy may extend downward, invading the cutis, and in very exceptional instances (White) lead to cancerous degeneration of the affected skin.

The eruption is usually symmetrical, and no portion of the skin is exempt; but it is especially localized on the extensor surfaces of the limbs and trunk, over the sacrum, and upon the hairy scalp. The palms of the hands and soles of the feet are only very rarely affected. In nearly all cases the elbows and knees are the seats of large, thick patches.

Upon the scalp the accumulation of scales is often enormous, a thick crust being formed, which covers the entire head. There is usually a hyperæmic band extending crown-like around the head, beyond the hairy border. When it affects the ears it may produce functional deafness, by causing an accumulation of scales in the auditory meatus.

The nails are sometimes attacked, becoming dry, brittle, roughened, and lustreless.

Bearing the principal features of psoriasis in mind, the *diagnosis* in most cases should not be difficult. In some instances, however, no little difficulty arises in differentiating it from diseases presenting like appearances.

Seborrhœa of the scalp often presents a condition very similar, at first glance, to psoriasis. In the former, however, the scales are greasy and dirty-looking, and there is often falling out of the hair. The abrupt-curved border is also wanting in seborrhœa, in which the redness is generally less marked, and shades off insensibly into the normal skin.

Scaly eczema may sometimes resemble psoriasis so nearly as to make an exact diagnosis impracticable for some time. By carefully watching the progress of the disease, however, the differentiation can usually be made. In eczema there will often be moist patches interspersed among the scaly spots, and there will be yellowish crusts and scabs in addition to the scaliness. In psoriasis, exudation of fluid upon the surface and crusts are absent. The well-defined outline is also wanting in eczema.

The squamous syphilide may sometimes be mistaken for psoriasis. The eruption in syphilis is generally more copiously distributed on the flexor than on the extensor surfaces, and is especially liable to occur in the palms of the hands. On scraping off the scales in the syphilitic eruption there is no bleeding. The red color in psoriasis is due to hyperæmia of the cutis, and disappears under pressure. In syphilis it is due to an infiltration, is not so bright-colored, and does not disappear under the finger. In scaly syphilis there are nearly always scaly patches in the palms of the hands. In psoriasis the palms are very rarely affected.

Ringworm of the scalp sometimes resembles patches of psoriasis very closely. In ringworm, however, the hairs are nearly always affected, being dry and broken. The bright-red base of the psoriasis lesions is also wanting in ringworm.

The *prognosis* is favorable so far as any individual attack is concerned. But in psoriasis there is always a peculiar predisposition of the skin, which we cannot, with our present knowledge, eradicate. Hence, it is the rule for psoriasis to recur at a variable interval. For this reason we can never promise any patient a *cure* in the strict sense of the term.

The *treatment* of psoriasis must be both constitutional and local. Among the internal remedies the first place belongs to arsenic. For details of administration of this remedy, see section on treatment of eczema, pages 56 and 57.

From considerable personal experience I am firmly convinced of the great value of arsenic when properly administered. Its unquestionable specific action in modifying the epithelial tissues renders it an especially appropriate remedy in psoriasis, and, in fact, all chronic scaly skin diseases. In some cases of psoriasis it will produce a complete disappearance of the eruption without any local measures whatever. It must be confessed, however, that local treatment alone is competent in many cases to remove the lesions, especially if the outbreak is not very extensive.

I believe I have seen good effects follow the administration of alkaline diuretics, either as the only internal treatment or as a precedent to a course of arsenic. The preparation preferred is the acetate of potassium, which I usually order in combination with fluid extract of taraxacum, as in Formula 41.

Carbolic acid, 4 to 5 grains (.25 to .30), three times a day, made into pills, with powdered licorice, has been recommended, but the benefit derived from it is very slight.

The local measures of treatment may be divided

into the preparatory and curative. To the former belong water (baths, lotions) and soap, while in the latter category are included tar, sulphur, naphthol, mercurial preparations, chrysarobin, pyrogallic and salicylic acids.

Baths and lotions, either of pure water or rendered alkaline with carbonate of soda, are useful in removing the accumulated scales or patches of psoriasis. Their employment should be combined with soap and friction, in order to free the surface of scales and allow the remedial application to be made directly to the diseased skin. The frictions with soap and water should always precede the application of whatever medicament is used.

Tar has always enjoyed a high reputation as an external remedy in psoriasis. It is employed either pure or in ointment, or alcoholic solution.

Dr. Bulkley has introduced an alkaline solution of tar, which is soluble in water, and which is frequently of great value in the treatment of psoriasis. It is prepared according to Formula 42.

This may be applied to indurated patches in full strength, as above, or diluted with an equal part of water. It should always be followed by some soothing ointment, such as oxide of zinc or calomel ointment.

As a substitute for tar, naphthol has been used by Kaposi and others. It may be employed in ointment (℥ss–j to ℥j) [1–8 to 1–16] or in alcoholic solution (℥j to ℥j) [1 to 8]. Its advantages over tar are that it has no decided odor, and does not discolor the skin or clothing. At the same time it appears to be much less efficient than tar.

Sulphur is a remedy of value in psoriasis. It is sometimes employed, with good effect, in the form of

the solution of sulphuret of lime, known as Vleminckx's solution (Formula 43).

The patches are rubbed with this until slight bleeding results, when the solution is washed off with water and a soothing ointment applied for several days, until the irritation has subsided. If the infiltration has not disappeared, the same procedure may be repeated. This method of treatment, although very effectual, is painful, and should not be applied over large surfaces at a time. It is only required in old cases, where the infiltration is deep and extensive.

One of the most efficient applications is chrysarobin. It may be ordered in ointment (℈j–℥j to ʒj) [1–24 to 1–8], or, better, in collodion or solution of gutta-percha in chloroform, which is painted on the patches daily, or every other day. The strength of this paint may be varied from 5 to 20 per cent. It has the advantage over ointments of being dry, cleanly, and immovable.

A caution must be added against using a strong application of chrysarobin about the head and face. It stains the skin and hair of a reddish brown, and not infrequently causes an erysipelatoid inflammation in the vicinity of its application. It also indelibly stains linen.

Pyrogallic acid, applied in the same manner as chrysarobin, is also often effectual in psoriasis. It stains the skin brown or black, and, if applied over a large surface at a time, may cause symptoms of poisoning (strangury, dark-colored urine, etc.).

Salicylic acid in solution in collodion (10 to 20 per cent.) is useful at times, especially in mild cases.

For psoriasis about the face and scalp I have always used, with good effect, the ointment of ammoniated mercury (℥ij to ʒj) [1 to 4]. In the milder degrees of

psoriasis it nearly always produces a rapid disappearance of the lesions. It should not be applied over too large a surface of the skin at a time, as it may be absorbed and cause symptoms of mercurial poisoning.

The treatment of psoriasis is often unsatisfactory, and when, after long and earnest endeavor, the patient has been freed from his disease, a renewed outbreak of the eruption usually appears in the course of a few months, or a year or two. A permanent cure can never be safely promised.

EXFOLIATIVE DERMATITIS.

I venture to class under this title several affections differing in their clinical features, but having as a common symptom superficial inflammation of the skin, with furfuraceous or laminar desquamation of the epidermis. Exfoliative dermatitis may be acute or chronic, general or local.

I. ACUTE EXFOLIATIVE DERMATITIS OF INFANTS.

In text-books on skin diseases may be found accounts of a fatal affection, which is described under the name of "Acute Pemphigus." The disease attacks young children only, runs a rapid course, and is, in the majority of cases, terminated by death. Hebra and most dermatologists of his school emphatically deny the occurrence of pemphigus in an acute or epidemic form.

Von Ritter has described the disease under the title at the head of this article. He observed two hundred and ninety-seven cases in the course of ten years. The mortality was about 50 per cent.

The children attacked were nearly all between two and five weeks old. There is usually a prodromal stage, manifested by abnormal dryness of the integument with desquamation of the epidermis, in the form of fine,

branny scales. The skin of the lower part of the face, especially about the angles of the mouth, becomes red and slightly tumid. The margin of the redness, which rapidly spreads, is indistinct, not being sharply defined against the healthy skin. At the same time, the skin at the angles of the mouth becomes fissured and covered with scabs. The mucous membrane lining the pharynx and buccal cavity is reddened, and the palatal arch is the seat of superficial erosions, covered by a grayish-white exudation.

The appetite and digestion of the infant remain unimpaired, and there is no increase of temperature. The redness and thickening of the skin extend over the entire body. The face becomes covered by yellowish, translucent scabs upon a reddened base, intersected in various directions by fissures. The skin becomes wrinkled, and the upper layer separates from the cutis. The epidermis may be detached in large flakes or is cast off spontaneously. This process, continuing until the entire surface is denuded of epidermis, presents an appearance similar to that following an extensive scalding. In favorable cases the dark, raw-flesh color of the cutis soon gives way to a lighter red, and in some cases the normal color of the skin is restored in twenty-four to thirty-six hours. In unfavorable cases, on the other hand, the color is a dirty, brownish red, and the cutis becomes dry and parchment-like. In those cases which terminate in recovery the normal condition is entirely re-established in a week or ten days, the skin for a few days being covered by a fine, branny desquamation.

As *sequelæ* of the disease, eczemas of considerable extent, or pea-sized and larger, superficial boils and abscesses, sometimes in large numbers, occur and delay complete recovery. At other times extensive phlegmon-

ous infiltrations occupy considerable tracts of skin, and may result in gangrenous destruction of tissue and death. In the latter conditions, pneumonia and colliquative diarrhœa not rarely precede the fatal termination.

Relapses are infrequent. When they occur, the disease is of a milder type than originally.

The disease seems to be a manifestation of septicæmic infection, principally localized upon the external integument.

The *diagnosis* is easy, no other disease being liable to be mistaken for it. In erysipelas, which sometimes affects infants in a similar manner, there is always considerable elevation of temperature; this symptom is absent in exfoliative dermatitis. In pemphigus there are blebs surrounded by a reddish border, separated from adjoining blebs by healthy integument. In exfoliative dermatitis the redness and thickening are progressive and occupy finally the entire surface.

The post-mortem appearances present nothing characteristic. The etiology is unknown. The disease is not contagious. There are no known means of prevention.

The *treatment* is purely symptomatic. Sufficient nourishment of the infant at the breast is of the first importance. Pure air, the room not kept too warm. Locally, cool baths, drying the skin with fine, soft cloths, and carefully avoiding friction will meet the indications in most cases. Ragged and loose patches of epidermis should be clipped off with the scissors, and all denuded and fissured surfaces dusted with finely-powdered calomel. The crusts which accumulate at the angles of the mouth and render nursing difficult and painful, are best gotten rid of by soaking them with oil of sweet almonds and carefully removing the loose

ones by means of a dressing-forceps. Baths of oak-bark (80 to 100 grammes to 1 litre of water), one-half of this decoction to be added to each bath, are sometimes useful. In uncomplicated cases no internal medication is necessary. All complications, of course, should receive appropriate treatment.

II. BULLOUS EXFOLIATIVE DERMATITIS.

In another form of exfoliative dermatitis, the epidermis is slightly raised over greater or less areas by collections of serous or sero-purulent fluid. This finally dries up, or escapes through ruptures in the epidermis, and the latter is detached in papery flakes. The surface of the skin under the exfoliating epidermis resembles that already described (p. 106). This form of the disease is generally described in dermatological works as *pemphigus foliaceus.* It is sometimes acute, but more frequently chronic. It is usually a disease of early life, although occasionally observed in adults.

The *prognosis* in this disease is usually grave. The strength gradually gives way, and the patient dies under all the manifestations of exhaustion.

The *treatment* must be guided by the condition of the patient. The exposed skin must be protected by some bland, fatty application. A paste of finely-powdered starch and vaseline, equal parts, may be freely applied. Internally, roborant remedies—iron and codliver-oil—will be indicated. Arsenic in small doses may be tried. Inunctions of codliver-oil will be useful.

III. CHRONIC GENERAL EXFOLIATIVE DERMATITIS.

This is a rare disease, first accurately defined by Hebra, who named it *pityriasis rubra.* There is deep-red discoloration of the skin, little infiltration, no exudation on the surface, and absence of papules, vesicles,

or fissures. The epidermis is constantly exfoliated from the entire surface, in large, papery scales. The subjective symptoms are slight, the itching being usually very moderate. In course of time (months or years) the skin becomes dry, harsh, loses its elasticity and pliability, the hairs fall out, and the nails become cracked and deformed. The patients generally die of progressive exhaustion or succumb to some intercurrent disease.

The administration of quinine sometimes causes an acute, general, scaly eruption, resembling somewhat exfoliative dermatitis.

The *prognosis* is grave. Few patients recover from the disease.

The *diagnosis* from general eczema is not difficult. In eczema there are always moist patches; there is usually infiltration, and the entire surface of the skin is rarely attacked. In general exfoliative dermatitis, there is sometimes not the smallest patch of healthy skin remaining. No other disease is likely to be mistaken for it.

No *treatment* has hitherto been found of any value. Inunctions of almond and raw linseed- or codliver-oil promise best results. Internally, iron and good food are indicated to counteract the tendency to exhaustion.

IV. LOCAL EXFOLIATIVE DERMATITIS.

This disease has been described as a pityriasis (furfuraceous desquamation), occurring in small, round spots and larger circinate patches. The color of the lesions is a pinkish or rose tint, and the spots are covered with fine, white scales. There is sometimes slight itching, but no other subjective symptoms. The patches are not infiltrated. The chest and neck appear to be the sites of predilection, but in one case observed by the

writer the face was especially affected. According to Duhring, the disease usually lasts from four to six weeks. The general appearance and course of the affection recalls the vegetable parasitic skin diseases, but no characteristic fungus has yet been discovered.

The *treatment* consists in the application of mild ointments, such as calomel (ʒss to ʒj) [1 to 16], or yellow oxide of mercury (gr. x to ʒj) [1 to 50], or salicylic acid (gr. v to ʒj) [1 to 100]. Internally, no treatment is required.

LICHEN.

Lichen occurs in the form of flat or acuminated, red papules, seated upon normally colored skin. The eruption may be discrete or aggregated. Two varieties are described: the plane (*lichen planus*) and the acuminated (*lichen ruber acuminatus*). The disease is rare,—about one case being observed in five hundred cases of skin diseases of all kinds.

The plane variety appears as crimson, flattened, or even slightly umbilicated papules, angular in outline, usually discrete, though sometimes aggregated in disk-shaped groups. The localities in which it is oftenest found are the flexor surfaces of the forearm, the calves of the legs, the thighs, the penis, and scattered about the trunk. The acuminate variety consists of pin-head-sized, conical, firm papules, capped with a hard, dry mass of epidermic scales, which convey a rough sensation to the hands when passed over the affected surface. In the most aggravated form these papules become closely crowded together, until they present an almost uniform red sheet of eruption. This is, however, exceedingly rare in this country. Dr. R. W. Taylor has shown that the two forms here described are essentially different diseases.

When the eruption disappears, either spontaneously or as the result of treatment, a dark, slaty pigmentation remains for some time.

There are, generally, no marked subjective symptoms. Itching is sometimes present, however, and may be a prominent symptom.

The disease differs from papular eczema in always preserving the papular form, which is the only lesion present.

In eczema there are nearly always some of the other manifestations of the disease. The itching is usually less intense in lichen.

The dark, slaty pigmentation is also characteristic. In psoriasis the pigmentation is usually less persistent. The flattened or umbilicated summits of the plane variety are so characteristic that little difficulty can arise in the diagnosis.

In the milder cases the *prognosis* is favorable. In those cases, however, where a large surface is covered by the eruption, the patients frequently die from marasmus.

In the *treatment* arsenic claims the first place. It should be given until the full physiological effects are manifested, when the disease will usually be found to yield. Tonic medicines will also be needed in many cases.

The itching, when present, can often be allayed by alkaline baths or lotions containing carbolic acid. In the more localized forms of the eruption ammoniated mercury ointment is sometimes of benefit.

Scrofulous lichen is described by German authors, but has not been observed in the United States. The papules are small, pale-red or yellowish, sometimes scaly, and do not itch. The internal and external use of codliver-oil never fails in curing the disease.

PRURIGO.

Prurigo is an exceedingly rare disease in this country. The proportion of prurigo to all cases of skin disease reported to the American Dermatological Association is about one in ten thousand. The disease appears as a papular eruption, generally beginning in childhood, attacking by preference the extensor surfaces of the limbs, and never the face or palms of the hands. The flexor surfaces of the joints also generally remain free from the eruption.

The itching is intense. In no other disease does this symptom approach in severity the itching of prurigo.

The disease is differentiated from lichen by the isolated character of the lesions, and from eczema by the absence of exudation upon the surface (unless an artificial eczema has been produced by the scratching) and the persistence of the papules throughout the duration of the disease. The summits of the papules are often covered by small brown crusts, the result of excoriations produced by the finger-nails in scratching.

The *prognosis* is gloomy. A permanent cure is not to be hoped for, and even temporary relief is difficult to secure.

The *treatment* must be palliative. Ointments containing tar and sulphur may be used with good effect. Latterly, ointments or lotions of naphthol (5 to 10 per cent.) have been found to give relief. Happily, few practitioners in the United States are liable to be called upon to treat this terrible disease.

ATONIC PUSTULAR ERUPTIONS.

Pustular eruptions will usually be found in individuals who are anæmic, or in otherwise vitiated health.

Excluding pustular eczema, syphilis, or pyæmia, a certain number of cases of pustular eruptions will be met with which cannot be definitely ranged under one heading. In most text-books they are described under the titles "impetigo" and "ecthyma," but many modern dermatologists discard these terms altogether. These eruptions are usually due to local irritations in debilitated subjects. The pustules are from a pin-head to a pea, or even a large bean, in size, flat, or slightly convex, with inflamed borders. When they are ruptured they leave shallow ulcers, with a grayish, unhealthy-looking base. The pustules may be disseminated over the entire body, but are in most cases localized. In adults they are most frequently found upon the legs. I have noticed them especially in sailors and other persons similarly exposed, and who were, in addition, overworked and underfed. In many of the cases which have come under my notice, a slight sponginess of the gums, suggesting a scorbutic tendency, has been observed. In badly-nourished children the pustules are not seldom seen upon the face and hands.

The *treatment* of these atonic pustular eruptions and their sequelæ, the superficial ulcers, is simple and promptly effectual. Cleanliness, dry clothing, dry and comfortable bed, fresh air, good and sufficient food and rest will often produce a cure without any medicine. Tonic medication will, however, be advisable generally. As a medicine, tincture of chloride of iron, in doses of 20 to 30 minims three or four times a day, will fulfill all the indications.

Locally, carbolic-acid ointment, or the ointment of oxide or oleate of zinc, or carbonate of lead will promote healing of the slight ulcerations.

CONTAGIOUS IMPETIGO.

This disease was first described by the late Dr. Tilbury Fox, in 1862. It generally appears in the form of vesico-pustules or blebs, varying in size from a pea to a Lima bean. The blebs rise abruptly from a non-inflammatory base, and usually appear as if only partly filled with fluid. The fluid, which is at first clear, rapidly becomes changed into a thin, milky pus. This is soon absorbed, or dries with the roof of the bleb into a thin, brownish crust, with turned-up border, lightly adherent at the centre, looking as if "stuck on," as Fox expressed it.

The eruption usually first appears upon the face or hands, and, being auto-inoculable, may be transferred to other portions of the body. It is very contagious, and usually affects all the children of the same family. It rarely attacks adults, but may be inoculated upon them, as I have shown experimentally.

When the scabs fall off a brownish surface remains, which gradually fades away. The disease runs its course in from two to four weeks. The lesions are usually discrete, but sometimes a number of the blebs run together, forming a larger patch, which may resemble eczema; the latter disease may also be produced by scratching or improper treatment.

In uncomplicated cases the *diagnosis* is usually easy. Contagious impetigo is sometimes mistaken for pemphigus; but the peculiar character of the crusts in the former and the chronic nature of the latter disease will suffice to distinguish the two affections.

The disease is spread by contact. It is believed by some to be caused by a parasitic growth. Fox seems to have regarded it as an infectious disease. Its cause is unknown.

The *treatment* consists in cleanliness, removal of the crusts, and dressing the surface with oxide of zinc or a weak ammoniated mercury ointment (gr. v to ℥j) [1 to 100]. If the child is badly nourished, tincture of chloride of iron and codliver-oil will be useful. Patients with contagious impetigo should be isolated, to prevent spreading of the disease.

PEMPHIGUS.

Pemphigus is a chronic disease of the skin, characterized by the outbreak of blebs, varying in size from a small bean to a hen's egg, or larger, generally appearing in crops, and accompanied by more or less febrile disturbance. This definition sufficiently characterizes pemphigus, and marks it as a disease standing by itself. It is not merely an eruption of blebs, but successive crops of these blebs appear. The blebs of pemphigus rise abruptly from the sound skin, have no inflammatory areola, and are, in most cases, tensely filled with a clear, yellowish—sometimes purulent—fluid, or at times contain blood.

In a few days the fluid is re-absorbed; the roof of the bleb, with some of its contents, dries into a thin scale, which, when removed, leaves a reddened, but otherwise apparently healthy, base. If, by means of the prick of a needle, or otherwise, the contents of the bleb are discharged, the latter collapses and dries up, as in the last instance. Unless irritated by mechanical means or stimulating applications, pemphigus blebs rarely contain pus, and no ulceration takes place at their base; hence uncomplicated pemphigus leaves no scars. The blebs consist of single cavities, not subdivided into compartments, as are the pustules and bullæ of small-pox in their earlier stages.

Diagnosis.—The disease probably most frequently mistaken for pemphigus is contagious impetigo. There can be little doubt that many cases of "acute pemphigus" in which the patients recover, or epidemics of pemphigus, are really cases of contagious impetigo.[1] The resemblance is sometimes very close, and only a careful investigation will disclose the true nature of the disease in many instances. If the characteristic marks of the two diseases are remembered, however, no mistakes should occur.

In a number of cases of erysipelas, frost-bite, burns, scalds, and the application of cantharides or mezereon, bullæ appear on the affected part. Here pemphigus can always be excluded by the presence of the uniformly reddened or inflamed base upon which the blebs appear.

In the later stages of acquired syphilis, a bullous eruption sometimes appears, which is termed, by some authors, "syphilitic pemphigus." The name is misleading, as the eruption of bullæ is the sole point of resemblance. The bullous syphiloderm, as this affection is more properly termed, is differentiated from pemphigus by an inflammatory areola surrounding the base of the bleb, which becomes purulent, the contents drying into a greenish-brown scab seated upon an ulcerated base, constituting what is called rupia. The bullous syphiloderm is more frequent in children as a manifestation of inherited syphilis.

The early stage of true leprosy is frequently accompanied by an eruption of bullæ. In this disease, however, some hyperæsthesia, followed by anæsthesia of the spots occupied by the blebs, generally precedes the erup-

[1] The grave variety of so-called "acute pemphigus" has been described under the title, "Acute Exfoliative Dermatitis of Infants." See p. 104.

tions. Other concomitant symptoms of grave involvement of the constitution will also be present, and enable the physician to exclude pemphigus.

Small-pox may cause a difficulty in diagnosis,—a difficulty which is, perhaps, more serious than that presented by most other diseases, on account of the results which may ensue if a case of the former should fail to be recognized. In small-pox, however, the blebs always contain pus or blood; are not simple cavities, but subdivided into compartments; are seated upon an inflamed base, and followed by ulceration and loss of substance. The prodromic symptoms of small-pox can also usually be verified in the latter disease; these do not occur in pemphigus.

In rare cases of exudative erythema, large blebs sometimes occur as one of the multiform manifestations of this disease. The accompanying papules and the generally-present patches of diffused red or brownish discoloration will serve to distinguish the affection. The so-called herpes iris, which has doubtless sometimes been mistaken for pemphigus, is now generally regarded as merely one of the forms of exudative erythema.

In some rare cases of urticaria, the summit of the wheal is occupied by a bleb, which may simulate the bullous eruption of pemphigus. The presence of other wheals, the urticarial irritability of the skin, and the intense itching in nettle-rash will serve to distinguish it from pemphigus.

Dermatitis herpetiformis may cause some doubt in diagnosis, but in this disease the lesions tend to multiformity, while in pemphigus only blebs are observed.

Charcot has pointed out that a bullous eruption sometimes occurs in consequence of nerve-lesions. These eruptions may appear consecutively, simulating

the recurrent eruptions in pemphigus. Scars remain in these cases, however, to mark the seat of the blebs, which is an exceedingly rare result in pemphigus. In the latter disease, also, the eruption would not be so strictly limited to the area supplied by an injured nerve.

Scabies is occasionally accompanied by large bullæ. The presence of papules, pustules, furrows, and excoriations, accompanied by severe itching, and the acarus, discoverable with a lens, would exclude pemphigus.

An important, possibly frequent, and certainly rarely-recognized cause of bullous eruptions is the ingestion of certain medicines. Arsenic, potassium bromide and iodide, quinine, copaiba, and phosphoric acid have been followed by bullous eruptions more or less resembling pemphigus. It should, in all cases of doubt, be ascertained whether such medicines have been taken, before deciding upon the diagnosis.

It needs to be added that the practitioner must be constantly on his guard against being victimized by feigned bullous eruptions, *i.e.*, eruptions of blebs caused by the designed application of chemical or dynamical irritants to portions of the skin with intent to deceive. Hysterical women are, of course, the most frequent offenders in this respect; but it must not be forgotten that men sometimes malinger by feigning various formidable skin eruptions. The methods by which bullæ are produced artificially consist in the application of hot iron, sinapisms, cantharides, strong acids or alkalies, and, perhaps, in some instances, prolonged pressure. The possibility of this occurring must be constantly borne in mind in order to avoid being discomfited by a malicious or dishonest patient.

The *causes* of pemphigus are unknown.

The *prognosis* is generally favorable. While relapses

are exceedingly liable to occur, individual attacks can usually be controlled by proper treatment. When the eruption is very extensive, however, the patient may succumb to the disease.

Treatment.—Arsenic appears to be almost a specific in pemphigus. The medicine must be given in full doses and freely pushed. Fowler's solution may be given, in 8- to 10-drop doses, three or four times a day. It should be given in sherry wine, as it is better borne by the stomach than when diluted with water. Quinine is also useful. Good food and proper hygienic surroundings are important adjuvants to the treatment.

Locally, much may be done to increase the comfort of the patient. The blebs should be punctured and the affected parts may be bathed with a lotion of carbolic acid (gr. x to ℥j) [1 to 50] or black-wash. Various dusting-powders may also be used. When itching is severe, Bulkley's *liquor picis alkalinus* diluted with 6 to 10 parts of water will often give relief. Bran or gelatin baths are sometimes useful.

In some cases, ointments, such as Hebra's or oxide-of-zinc ointment or Lassar's paste, applied on cloths, give more relief than baths or lotions.

Exfoliative pemphigus has been described on page 107, under the title "Bullous Exfoliative Dermatitis."

HÆMORRHAGES.

CUTANEOUS hæmorrhages are either traumatic or symptomatic. The former are such as result from mechanical injuries, or the bites or stings of insects. Flea-bites sometimes cause minute extravasations of blood in the cutis, which are of importance merely on account of the liability of mistaking them for other and perhaps graver troubles. The hæmorrhagic spots are surrounded by an erythematous areola, and are generally attended by considerable itching.

SYMPTOMATIC CUTANEOUS HÆMORRHAGES.

I. PURPURA.

Three varieties of purpura are usually described, viz., the simple, rheumatic, and hæmorrhagic. The first and third probably differ merely in degree, while rheumatic purpura seems to be an outward expression of the blood change produced by the rheumatic diathesis. The cutaneous manifestations differ very slightly.

Simple purpura generally appears without constitutional disturbance. The eruption consists of "small, distinct, purple specks or patches," varying from a pin-head to a split pea in size. They may be disseminated over the surface, but are usually most numerous upon the lower extremities. There are no subjective symptoms, unless the eruption is accompanied by nettle-rash, as sometimes happens.

The *prognosis* is quite favorable. No *treatment* is necessary unless the general condition of the patient demands it.

Rheumatic purpura occurs in small spots, usually localized about the knees and ankles, although it may be generally disseminated. It is accompanied by fever and rheumatic pains in the joints.

The *prognosis* is really dependent upon the constitutional condition (rheumatism). Cases have ended fatally.

The *treatment* is that of articular rheumatism. Salicylic acid, alkalies, or oil of wintergreen may be given in appropriate doses. No local treatment is necessary.

Hæmorrhagic Purpura.—Hæmorrhagic spots and patches of various sizes, varying from a pin-head to a small coin, appear upon the skin and visible mucous membranes. There may be bleeding from the nose and conjunctivæ, spitting or vomiting of blood, and bloody discharges from rectum and bladder. Lassitude, loss of appetite, and digestive derangements usually precede the eruption for several days or weeks. The hæmorrhages from the mucous membranes may be profuse and cause grave depression of the vital powers.

The *causes* of the disease are not known. In not a few cases it has seemed to be connected with the administration of quinine. Iodide of potassium may also produce a purpuric eruption, as described in a previous chapter. The author has seen a purpuric eruption as one of the symptoms of poisoning by camphor.

The *prognosis* is usually favorable. If uncomplicated with any acute, infectious disease, or hereditary syphilis, hæmorrhagic purpura rarely ends in death.

Treatment.—Ergot, aromatic sulphuric acid, and tincture of chloride of iron are the remedies usually depended upon in this disease. Quinine, alcoholic stimulants, good food, especially fats, and hygienic surroundings are important adjuncts in the treatment. For

the hæmorrhages from the mucous membranes, cold or astringent applications or tampons may be required. To promote the absorption of the effused blood in the lower extremities, properly applied bandages are often useful. Woodbury has found fluid extract of hamamelis (℥ss–j) [2. to 4.] of benefit. The bleeding from the gums can be controlled, in a measure, by the local application of a 4-per-cent. solution of hydrochlorate of cocaine. The latter remedy was first used in this condition by Waugh. Poulet advises nitrate of silver in the form of pills, $\frac{1}{8}$ grain (.008) three times a day.

II. SCURVY.

Although scurvy is principally a disease of the general system, it has such marked cutaneous manifestations as to demand a brief reference here, especially with regard to its diagnosis from the affections just described.

The symptoms of scurvy are lassitude, listlessness, pains in the limbs, depression of spirits; the skin becomes pale and sallow. Petechial spots appear, generally first on the lower extremities. These may coalesce and form large, irregular patches. There is a puffy condition of the face, especially marked around the eyes. The scleral conjunctiva sometimes becomes of a deep red color, but this condition is not accompanied by pain or purulent discharge. The gums become spongy and swollen, sometimes to such an extent as to project completely beyond the teeth. They bleed upon the slightest touch. This condition of the gums is, however, not an invariable accompaniment of scurvy, as it is held to be by so many authorities. There is often great shortness of breath. The skin and deeper tissues are infiltrated with blood, and tumors and bruise-

like swellings are frequently produced by the slightest injuries. The skin is liable to break down upon very slight pressure, and result in fungoid ulcers, which are often very destructive.

The *diagnosis* from hæmorrhagic purpura is not difficult if the symptoms of the two diseases be borne in mind. The pallor, listlessness, short-windedness, spongy condition of the gums, and bloating of the face are absent in purpura.

The *treatment* of scurvy consists in supplying an abundance of fresh meat and fresh vegetables, and placing the patient in a dry, well-lighted apartment. Fresh lemon-juice is highly useful in the treatment of the disease, as well as in its prevention.

As a preventive of scurvy at sea, two ounces of lemon- or lime-juice per week should be allowed to each person. When scurvy appears, the supply should be unrestricted. Locally, cocaine may be applied for the bleeding from the gums, as practiced by Waugh and Woodbury in purpura hæmorrhagica.

HYPERTROPHIES OF THE SKIN.

THE hypertrophies of the skin may be limited to either of the histological strata of this organ, or may involve more than one. Hypertrophies of the epidermal layer, including pigmentary, epithelial, and papillary hypertropy, with their combinations, will be first considered, and will be followed by the hyperplastic alterations of the vascular and connective tissues.

I. PIGMENTARY HYPERTROPHIES.

FRECKLES.

The sun's rays, acting as a stimulant through the peripheral-nerve terminations, sometimes cause an overproduction of pigment in the skin, which is collected in small, roundish masses, causing yellowish or brownish spots. These spots are called freckles, and they are more frequent in persons of blonde complexion. They are especially distributed on those portions of the skin covered by clothing, and are more noticeable in summer. The Germans call them *Sommerflecke* (summer spots). The discoloration is due, as above stated, to an increase in quantity of the normal pigment of the skin. The peculiar arrangement of the coloring matter is, doubtless, due to some action of the peripheral nervous system which is not clearly understood.

Freckles are generally believed to disappear entirely during the winter season. Hebra has shown, however, that this is not the case, but that they grow so faint, in the absence of strong sunlight, that they are no longer noticeable.

These little pigmentary blemishes can hardly be looked upon as a disease, but, from a cosmetic point of view, they are undesirable possessions. Hence, many persons, especially of the gentler sex, are anxious to get rid of them, and frequently apply to the physician for treatment. Inasmuch as the overproduction of pigment cannot be checked by any means at our command, a radical cure cannot be promised. The affection is, however, amenable to palliative treatment. A number of applications may be used, which will cause a temporary disappearance of the spots. Salicylic acid is one of the most effectual of these remedies. It is used in alcoholic solution or in ointment (Formulæ 43, 44).

During the day a lotion of corrosive sublimate (gr. j to ℥j) [1 to 500] may be applied two or three times.

These applications will soon produce a slight scaling and roughness of the skin, which is easily subdued by glycerite of starch. Should the skin become red and irritated, the applications must be intermitted until the irritation subsides.

Should a stronger application be needed, Formula 45, recommended by McCall Anderson, may be tried.

This will generally be found too irritant, however, for a skin that freckles. Glycerin lotion or glycerite of starch should be used during the day.

In slight cases a lotion of borax and chlorate of potash (Formula 46) answers the purpose very well.

CHLOASMA.

This is a very frequent affection, occurring upon the face, especially in women suffering from disorders of the generative apparatus. It is rare in men. The common name for it is "moth-patches." The affection *consists of* yellowish-brown or brownish patches on

various parts of the face. The forehead, chin, temples, and lower portions of the cheeks are principally affected. There is neither desquamation nor infiltration, and no subjective symptoms of any kind are present.

The *causes* are obscure. It is known that the discoloration appears frequently during pregnancy, to disappear after parturition. It is also a frequent accompaniment of uterine and ovarian disorders, and often disappears when these troubles are cured. The relation of cause and effect is, however, not known.

Chloasma resembles very closely tinea versicolor, a discoloration of the skin due to a vegetable parasite. The latter, however, in nearly all cases occurs upon the chest, abdomen, arms, and neck, namely, upon those portions of the body covered by clothing. It is very rarely seen upon the face or hands. Chloasma, on the other hand, is almost entirely limited to the face. Tinea versicolor is slightly scaly and sometimes itches. Neither of these features is present in chloasma. Finally, the latter disease occurs nearly altogether in females after the age of puberty, and generally in those who suffer from some derangement of the generative organs. Tinea versicolor is oftener seen in males.

The *treatment* of chloasma consists in removing the uterine or ovarian disease, if any can be found, upon which the pigmentation depends, and in promoting the casting off of the superficial epidermal layer, so as to bring a less pigmented stratum to the surface. For this purpose, the applications recommended above, for freckles, will be found useful. The ointment or lotion of salicylic acid, or a lotion of corrosive sublimate, 2 to 3 grains to the ounce, may be used. Soft soap, spread upon strips of muslin like an ointment and allowed to remain upon the pigmented skin for several hours, will

produce a maceration and desquamation of the epidermis, which often leaves the skin of a normal color after the redness has disappeared. The discoloration will, however, return, unless the use of one of the ointments or lotions mentioned is continued.

The application which will give the most satisfactory results is an ointment of subnitrate of bismuth and white precipitate (Formula 47).

This is applied to the discolorations at bed-time, and removed in the morning with Hebra's *spiritus saponis kalinus.*

This ointment I have used in a large number of cases with uniform success. Sometimes it is a little too active, and produces irritation of the skin. Its use must then be intermitted for a few days, or the ointment made weaker. Some skins can stand a much stronger application, however, and I have used as much as two drachms of each of the active ingredients to the ounce of vaseline.

The effect becomes manifest in a few days after beginning the use of the preparation. There is slight scaling and roughness of the skin, showing that a furfuraceous desquamation of the epidermis is going on. In the course of ten to fifteen days the skin has become much paler, and, if the application be continued, the normal tint of the skin can be regained. This can, however, only be maintained by the continued use of the ointment, unless the disease of the internal organs, upon which the discoloration depends, has been removed.

The pigmentation of the skin from sunburn usually soon disappears after the cause has ceased acting. The bleaching can be somewhat hastened by a lotion of corrosive sublimate in emulsion of almonds (gr. j to ℥ij) [1 to 1000].

Permanent discolorations of the skin are sometimes produced by a mustard poultice or blister. Hence, care should be taken to avoid making these applications to the face, or upper part of the chest in women, as they may prove the source of an annoying or humiliating disfigurement in the latter. I have seen a number of cases in which the chest had become pigmented from mustard poultices, thus interfering with the wearing of dresses cut *décolleté*. To many women this is not altogether a trifling matter.

In these discolorations the use of the salicylic-acid lotion, already mentioned, will prove useful. The prognosis must not be too sanguine, however, as the pigmentation is liable to return.

In certain chronic cachectic conditions, as cancer, tuberculosis, malaria, and Addison's disease, there is often a local or general pigmentation of the skin. As a matter of course, in these cases, there can be no question of treatment of the discoloration.

Scratching, friction, pressure, or constant irritation of the skin may be followed by localized pigmentations. Scars, especially those resulting from syphilitic infiltrations, also often leave dark spots and markings. They usually disappear without special treatment.

II. Hypertrophies of the Epidermal and Papillary Layers.

Epidermal Hypertrophy of Old Age—Keratosis Senilis.

In many elderly white persons, of both sexes, small patches of thickened epithelium are found, variously scattered upon the face, trunk, and extremities. These plaques are usually in the shape of roundish, or irregular, slightly elevated, brownish or blackish collections. Sometimes they are dry and hard, or cornified, but

oftener the patch is greasy to the touch, friable, and easily scraped off with the finger-nail, leaving a moist and reddened or slightly bleeding base.

When these epithelial patches are scraped or rubbed off, they rapidly re-form, causing the individuals so affected much annoyance, and often uneasiness, by their persistence.

Physicians generally regard this as a trifling ailment, and pay no attention to it; but careful observation will show that, not rarely, the constant epithelial hyperplasia results in an atypical formation, which eventuates in malignant ulceration,—true epithelioma.

I have several times observed the gradual transformation of these simple epithelial hyperplasias into malignant new formations.

While this condition of the skin is described by most recent dermatologists, only Hyde and Anderson mention its occasional termination in malignancy. Dr. Hardaway, of St. Louis, has also observed the malignant transformation of keratosis senilis.[1]

I am impelled by the results of my observation to call attention to the possible consequences of a neglect of this morbid condition, and to urge more careful attention to what is generally regarded as a trivial affection. Prompt and appropriate treatment is not only desirable for its cosmetic effect; it may often save the patient much suffering, and prolong his existence.

The *treatment* is generally simple. When there is as yet no infiltration, the patches should be softened with some indifferent ointment,—cold-cream or vaselin,—and then washed with soap and water, to remove all the epithelial accumulation. Soft soap, or *spiritus*

[1] Manual of Skin Diseases. St. Louis, 1890, p. 216.

saponis kalinus, may be needed for this purpose. Afterward, an ointment containing sulphur and salicylic acid (Formula 48) may be applied nightly, with success in most cases.

Dr. Hardaway informs me that he has had good results from the use of Beiersdorf's salicylated plaster-mull.

If, after six to eight weeks' persistent use of this, the epithelial accumulation returns, the patch should be lightly cauterized with caustic-potash solution (1 to 2), or the thermo-cautery, and following this with oxide-of-zinc ointment for a few days, when the use of the salicylated sulphur ointment is begun again.

If there is any infiltration, no temporizing is permissible. The patch must be thoroughly cauterized with the thermo-cautery, caustic-potash, arsenious, nitric, or lactic acids. In some cases I have obtained good results from electrolysis.

EPIDERMAL ACCUMULATIONS AT THE MOUTHS OF THE HAIR-FOLLICLES—KERATOSIS PILARIS.

Individuals with dry, harsh skins, who are, at the same time, too sparing in the use of baths, not rarely have a papular affection, especially localized about the anterior and outer surfaces of the thighs, the knees, etc. This sometimes causes considerable itching, and red inflammatory papules or pustules not rarely appear here and there. On close observation, it will be noticed that the papules consist of little epidermal accumulations around the mouths of the hair-follicles. The papules are frequently perforated by the hair. At other times the egress of the hair is prevented, and it may be seen curled up under the hard, epidermal cap.

The free use of hot water and soap will usually

suffice in removing the accumulated epidermis and relieving the subjective symptoms. In other cases, frictions with vaselin, sweet almond-oil, cold-cream, or a mild salicylic-acid ointment may be necessary for a cure.

EPITHELIAL MOLLUSCUM.

Epithelial molluscum, also called contagious molluscum, from its supposed contagious nature, is a rather uncommon disease in this country. It consists of small, globular tubercles, from a pin-head to a pea in size, and generally of a glistening, whitish or pinkish color. The summit of each tubercle is somewhat depressed, and a central point marking the opening of a sebaceous follicle can usually be made out. The most frequent seat of the disease is the face, especially the vicinity of the eyelids. It is also sometimes seen upon the genital organs. When irritated, the growths may inflame and ulcerate.

The tubercles are firm to the touch. Pressure applied to the sides can usually force the contents, consisting of a whitish, semi-fluid mass, through the aperture mentioned.

English authorities generally regard the disease as contagious; the evidence in favor of this is, however, insufficient. Inoculation experiments have always failed to transmit the disease. It is more frequent in children than in adults. The disease is a hyperplasia and alteration of the epithelial layer of the skin. Besides epithelial cells, the mass which is contained in the little growths contains roundish or oval bodies called "molluscum bodies." They are not peculiar to this disease, but are also found in other diseases of the epithelial stratum of the skin. These bodies are believed to be the result of a hyaline transformation of rete cells.

The *treatment* is entirely local. Expression of the contents of the tubercles is sometimes successful. Incision and cauterization with nitrate of silver may also be practiced with success. Kaposi recommends erasion with the curette. The electrolytic method will, however, succeed best in permanently removing the growths without leaving noticeable scars.

CALLOSITIES.

Callosities occur upon the palms of the hands and the soles of the feet, and, in fact, any part of the skin exposed to intermittent pressure. They are thickened, cornified patches, generally of a grayish or yellowish color, and slightly elevated above the skin. Shoemakers, tailors, and other mechanics, in whose occupations a limited part of the surface is exposed to repeated pressure, are liable to callosities. The patch consists of an increase of epidermis, closely packed and cornified.

The *treatment* consists in maceration of the thickened epidermis, and, if necessary, removal with the knife or solution of caustic potash. The part should be protected, to prevent re-formation of the thickened epidermis.

CORNS.

Corns occupy a position, pathologically, between the callosity and the wart. A corn is a circumscribed hyperplasia of epithelial tissue, which projects downward, by a conical prolongation, into the deeper epidermal layers of the skin. The epithelium is hard and cornified, and pressure upon the broad, up-turned base causes exquisite pain, on account of the impingement of the apex of the cone upon the cutaneous nerves. Sometimes the connective-tissue layer of the skin becomes atrophied from pressure, and, at others, inflammation and suppuration may occur beneath the corn.

These formations are usually found over the dorsal surfaces of the toes, but not rarely upon the soles of the feet or between the toes. The latter are called "soft corns," and are, if anything, more painful than those on the dorsum or plantar surface. They are generally caused by ill-fitting, though not necessarily "tight" shoes. An increase of humidity in the atmosphere usually intensifies the pain of corns. Hence the common observation, that increase of pain in the corns betokens a coming storm. This may be explained partly by the fact that increasing humidity renders the nerves more sensitive. Ultimately, the increased sensitiveness is probably due to the lower pressure of the atmosphere when the humidity is high, permitting an increase of blood-pressure in the skin, and thus compressing the nerve-terminations.

The *diagnosis* of corns will never give rise to any difficulty if the parts are inspected. That errors may arise, however, is shown by an interesting case related by Hebra, which may be quoted here on account of its instructiveness.

"The patient was a well-developed, stout soap-maker, whose occupation required his standing on his feet all day long. The man was suddenly attacked with severe pains in his feet. Great resolution was required to walk at all, which was only possible by the use of shoes with felt soles. His occupation was, in consequence, much interfered with. Inasmuch as he also experienced severe darting pains in his feet at night, and was, besides, well nourished and fond of the pleasures of the table, his physician declared the disease to be gout, ordered appropriate internal medication and baths, but without good result. The patient was then sent to Carlsbad, to use the waters. No relief was ob-

tained until hot baths were tried, when his condition was somewhat ameliorated. He still had pain on walking, but was easy when the feet were in a horizontal position. His return from Carlsbad was followed by an intensification of his trouble. He was again put upon anti-arthritic treatment, consisting of colchicum, acetate of ammonium, etc., and again sent to Carlsbad. No good result following after this second year at Carlsbad, I was consulted in the case. In accordance with my general rule, always to examine the affected part, which had been omitted by the patient's medical attendant, I examined the diseased feet and discovered in them the cause of the pains. On the sole of the foot was a large number of corns, from the size of a millet-seed to that of a lentil, and closely packed together. They were partly convex and partly concave from mutual pressure, which had given rise to the intense pain. The diagnosis, of course, was made, and afterward confirmed by examination of some of the specimens. The immediate effect of softening remedies and emollient plasters soon relieved the patient, and permitted him to return to his occupation." [1]

The preventive *treatment* of corns consists in the wearing of properly fitting foot-gear.

The discomforts of corns can be to a great extent relieved by protecting them against pressure. For this purpose the perforated corn-plasters sold in the drug-stores may be used with success.

Soaking the feet in hot water and afterward picking out the little cone of epithelium constituting the corn will give relief for a time, but, so long as the cause continues, the corn will return.

The "soft corns" which are found between the toes

[1] Hebra and Kaposi: Haut-Krankheiten. Bd. iii, p. 26.

generally give most trouble. In these cases a little wad of absorbent cotton placed between the toes will usually relieve the pain.

Salicylic-acid collodion, painted on the corn every night for three or four nights in succession, will generally cause the mass to come out of its bed and make a permanent cure. This preparation, or one similar to it, containing Indian hemp (Formula 49), is sold in the drug-stores under the names of "Gezou's Corn-cure," "Russian Corn-solvent," "Green Corn-paint," and perhaps other designations. It is an efficient and painless remedy.

The evaporation of the ether leaves an impervious and immovable covering of collodion over the corn, under which the salicylic acid produces its disintegrating effect upon the epidermal accumulation. The extract of Indian hemp is only added for the sake of its fine green color.

A considerable experience with this preparation has given me a high opinion of its usefulness. Care must be taken not to paint it upon the sound skin, otherwise it is liable to cause irritation.

WARTS.

Warts are outgrowths of the skin composed of hypertrophied papillæ covered by masses of epithelial cells. They are of various shapes,—filiform, pedunculated, or seated on a broad base. Their surface may be smooth, or rough and irregular. Sometimes the surface is granular, constituting the so-called "seed-wart."

These growths are very frequent, especially in children and young persons. Their favorite seat is upon the fingers, though the filiform and pediculated varieties are not rarely found upon the scalp, eyelids,

and neck. They are not entirely harmless, as they sometimes, though seldom, undergo malignant degeneration.

Warts are popularly believed to be contagious. Among country people the urine of the toad is credited with the production of these growths. Inoculation experiments have failed to demonstrate their contagiousness.

In one variety of these structures, the pointed condylomata or gonorrhœal warts, the causation is evidently dependent upon the irritation produced by acrid discharges. This variety is usually found upon the genital organs, and, by the aggregation of a large number of papillary prolongations, may produce cauliflower-like excrescences. They frequently secrete an offensive acrid fluid, which apparently has the property of reproducing the growths wherever it comes in contact with skin. Hence has arisen a wide-spread belief in their origin by contagion. This has not been absolutely demonstrated, but seems probable.

The removal of warts is easily accomplished by excision, cauterization, or electrolysis. When large and situated upon loose, movable skin, they may be picked up between the thumb and forefinger of the left hand and snipped off with sharp scissors. The wound may be dressed with dry lint or some simple ointment.

Most practitioners use caustics, fuming nitric acid being the favorite. Where many warts are cauterized at the same time, however, and especially when they are seated over joints, as the knuckles, the process is not entirely devoid of danger. I have seen a pretty serious case of erysipelas with extensive suppuration, leaving ugly scars, in a case in which I had destroyed a number of warts on the hands of a young girl. I have

likewise seen a deep, painful excavation produced on the scalp by the same means.

One method of destroying warts, which is pretty efficient, is to transfix the growth with a needle and then heat the end of the instrument in a spirit-lamp. The needle gradually becomes hot and produces a slow cauterization. The wart shrivels up and drops off in a few days.

The salicylated collodion recommended for the cure of corns is also useful. It will cause a gradual disappearance of the growth without producing any pain. Formula 50 may also be used.

Recently the internal use of sulphate of magnesia in doses of 10 to 20 grains, three times a day, has been recommended as a cure for warts. It is said to cause their disappearance in two to three weeks. I know nothing of its merits from personal experience.

In my hands, the best results have been obtained with electrolysis. The base of the wart is transfixed by a fine needle, forming the negative electrode of a galvanic battery. From 6 to 20 cells (1 to 4 milliampères) may be used. The circuit is completed by an ordinary sponge anode held in the hand. In a few minutes the wart turns pale, and slight frothing occurs around the needle. The circuit is then broken with the anode, and the needle withdrawn and passed through the growth at right angles to the former puncture and the circuit again made. In this way the wart is pierced in various directions until the base seems to be entirely disorganized. In a week or ten days usually the wart drops off, leaving a dry, non-cicatricial base. The pain of the operation is less than when excision or cauterization is used, and there is rarely any scar. When thoroughly done, no return of the growth need be feared.

CUTANEOUS HORNS.

These hyperplastic growths of the epidermis are very rare. They often start from altered sebaceous glands, but in some cases there is also hypertrophy of the papillæ. In many cases they seem to be mere outgrowths from the epithelial layer, their basis resting flat upon the skin, and may be torn off without causing pain, bleeding, or other symptoms. In those cases where the papillæ are enlarged, moving the horn will cause pain and bleeding. From personal observation of a case, I am inclined to believe that this form of horn is especially liable to malignant degeneration of its base. From the statistics I have examined, I am led to conclude that 10 per cent. of the cases of cutaneous horns are followed by cancer of that portion of the skin where the horn is attached.

These curious structures sometimes grow to a great size. Wilson reports one in a Mexican which was fourteen inches in circumference around its shaft, and divided above that point into three branches.

The most frequent situations of horns are the head, face, and genital organs, although they may be found upon any portion of the body. They are more frequent in women than in men.

Cutaneous horns are outgrowths of epithelial tissue. If removed they show a great tendency to recur, unless the base is thoroughly destroyed or excised. The liability to cancerous degeneration should be borne in mind.

The best method of removing these morbid structures is, probably, by excision, taking enough of the base and surrounding tissue away to remove any chance of recurrence. Cauterization of the base with caustic potash, or the thermo-cautery, would doubtless also be efficient, if thoroughly done.

The sebaceous glands in the sulcus behind the glans penis sometimes secrete a smegma, which becomes cornified and causes a sort of horny growth, which completely covers the glans. These cases are exceedingly liable to be followed by epithelioma. The horny material should be softened with oil-dressing or poultices, and, if cancerous degeneration has not yet taken place, the normal function of the glands may be restored by the constant application of a weak sulphur ointment. If the organ is already cancerous, of course the only procedure indicated is amputation.

PIGMENTARY NÆVUS.

It is difficult to give an exact anatomical description of nævus. Sometimes the blemish consists merely of an excess of pigment, when the spot may be looked upon simply as an exceptionally dark freckle. In most cases, however, there is, likewise, hypertrophy of the entire epithelial and papillary layers, sometimes even involving the deeper strata of the corium. Demiéville has shown that the pigment is mostly accumulated along the course of the finer blood-vessels, indicating that the coloring matter is derived from the blood.

Nævi may be flat, or elevated above the surrounding normal skin. Their surface is smooth or irregular, and is often thickly planted with hairs. They vary in size from a pin-head, or smaller, to large, irregular patches, which cover the greater surface of the body. The latter are often very hairy, and mixed with fibroid or lipomatous growths, as in a remarkable case illustrated in the volume on skin diseases in von Ziemssen's cyclopedia.

Some observers think that nævi are more frequently distributed upon the face than on other regions of the body, but this is probably an error. Physicians in

general practice have occasion to see these deformities upon the chest, abdomen, and extremities in cases where the face is entirely free of them. The greater apparent frequency of nævi upon the face is, doubtless, due to the more favorable opportunities for observation of these growths upon a portion of the body constantly exposed to view.

A curious variety of nævus is that first described by Arndt, in 1830, and afterward more thoroughly studied by von Bärensprung, Theodore Simon, O. Simon, and Neumann. In this form the pigmented and papillary hypertrophies follow the distribution of one or more branches of the cerebro-spinal nerves. Sometimes there is also vascular hypertrophy, as in vascular nævus. Bärensprung first suggested the dependence of these malformations upon disease of the spinal ganglia *in utero*. These cases are not very frequent.

Nævi are usually considered as mere blemishes, only demanding removal when they cause annoyance by their size or the disfigurement they produce. But in exceptional cases, especially if subjected to persistent irritation, they may undergo malignant degeneration. I have seen four cases in which a pigmented mole was the starting-point of an epithelioma. One case occurred in an elderly maiden-lady, who had attempted the destruction of a mole upon the forehead by the application of nitrate of silver. The persistent irritation produced resulted in the development of a rodent ulcer, which was successfully treated by scraping and thorough cauterization. In another case, a warty mole, situated near the tip of the nose, became rapidly cancerous, resulting in the formation of a tumor as large as a medium-sized pear. Microscopic examination proved the correctness of the clinical diagnosis of epithelial cancer. This

tumor was removed by the means of the thermo-cautery. In a paper read before the American Dermatological Association in 1886, Dr. Sherwell, of Brooklyn, also directed attention to the danger of malignant degenerations. Schwimmer has observed the degeneration of moles into melanotic sarcoma.

The very rare and curious affection described under the names of "atrophia cutis," "xeroderma of Hebra," and "angioma pigmentosum et atrophicum" may be referred to in this place. Dr. R. W. Taylor, of New York, has studied the disease most thoroughly in a series of cases, and Drs. J. C. White, of Boston, and Duhring, of Philadelphia, have added observations of their own. There appear to be several varieties or stages of the disease. Dermatologists are not yet in unison as to the course of the affection, but it seems well established that malignant (epitheliomatous) degeneration is a frequent termination. The manifestations of the disease are somewhat complex. There is, according to Dr. Taylor, at first excessive vascular development, resulting in the formation of minute, bright-red spots, followed by pigmentation and atrophy. Dr. White considers the melanotic process to be the primary and typical one, and that the atrophy of the skin and vascular development are secondary and non-essential.

The *causes* of pigmentary nævi are entirely unknown. In the majority of cases, they are unquestionably hereditary. It is probable that in many of the cases in which direct heredity cannot be shown, there is indirect inheritance.

In view of the rather frequent malignant degeneration of pigmented nævi, it is certainly good practice to remove them, if situated in a locality subjected to irri-

tation. Every nævus may, without exaggeration, be looked upon as a potentially malignant growth.

The methods of removal are excision, cauterization, and electrolysis. When the growth is small, the latter method will give the most satisfactory result, as the scar which remains is smooth, soft, and non-contractile. The thermo-cautery may also be used, but will give less satisfaction than electrolysis.

Acid nitrate of mercury and nitric acid are the best caustics. Their action can be limited, and they leave smooth and pliable scars.

Where the nævus is large and disfiguring, it may be excised with the knife, and, if necessary, a plastic operation performed to supply the deficiency of skin. The operation should be done as early in life as practicable, as the growth enlarges with the increase in size of the features.

ICHTHYOSIS—FISH-SKIN DISEASE.

Ichthyosis is rather rare in this country. The statistics of the American Dermatological Association show that one case of ichthyosis occurs in about four hundred cases of skin disease of all kinds.

The name "fish-skin disease" well describes the appearance of the affection when well marked. The epidermic covering forms variously sized diamond-shaped plates, looking very much like the scales of a fish. This scaly arrangement is particularly pronounced upon the lower extremities, and especially upon the extensor surfaces. The flexures of the joints are usually free from the disease, or affected to a much slighter degree. These thickened epithelial plaques are generally much discolored, probably owing in part to dirt, but partly also to increase of pigment in the

epidermis, as has been determined by microscopic examination.

In the milder degrees of ichthyosis the skin is dry, hard, and scaly, has a dirty and lifeless appearance, and is totally devoid of the normal softness and pliability, except in the flexures of the joints. In many cases this stage is not exceeded, the large, thickened, cornified plates not being produced. These cases are often described as xeroderma, or "dry skin."

In some extreme cases the plates are very much thickened, and subdivided by deep clefts into small, columnar areas. In others, the epithelial hyperplasia seems to be limited to the sebaceous glands, causing little spines of hardened epithelium to project from the gland-ducts. This form has given rise to one of the popular names, "porcupine disease," for these cases. It is usually limited to patches of various size, rarely extending over the entire surface of the body. Ordinarily the palms of the hands and soles of the feet are exempt from this disease, but exceptionally it may be limited to these surfaces. In these cases the diagnosis of tylosis is frequently made, but the hereditary nature of ichthyosis and its appearance early in life will enable the two conditions to be readily differentiated.

In very rare instances children are born with an ichthyotic skin. These children are generally born prematurely, and, if living, always die within a few days after birth.

The *causes* of ichthyosis are entirely unknown. It is a hereditary disease, the transmission being usually direct, and oftenest in the male line. Instances of cross heredity are, however, not infrequent. An interesting fact connected with the etiology of ichthyosis is its endemic prevalence in certain limited areas of the earth.

Hirsch ("Hist. Geogr. Pathologie," iii, 466) refers to reports of such endemics in Borneo, the Molluccas, the Marquesas and certain islands of the Samoan group, Guyaquil, the Peruvian and Senegambian coasts. The prevalence of the disease in these limited areas may be accounted for by its pronounced hereditary nature, being transmitted and, perhaps, intensified in character by the close in-and-in breeding in such localities. Hirsch suggests that the disease may be parasitic in origin in its endemic form.

Treatment.—Ichthyosis is not permanently curable by any means now known to the profession. The disease, however, never produces any unfavorable effects upon the general health. The local symptoms may always be relieved by appropriate palliative measures.

Of internal medicines, arsenic and tar have been highly recommended by some authorities, but, at the present day, few dermatologists use either in this disease. From arsenic benefit might reasonably be expected, on account of its well-known influence over the nutrition of epidermal structures. It has, however, failed to realize the anticipations of most of those who have given it a trial in this disease. Lombroso has used with success, in one case, *ustilago maidis*, or corn-smut, in doses of 30 grains per day, continued, with brief intermissions, for four months.

The first indication in the treatment of ichthyosis is to remove the epithelial hypertrophy, and the second to restrict its re-formation as much as possible.

As the disease is always milder in summer, the thought occurs that free perspiration promotes the removal of the thickened epidermis, and, on trial, this is found to be the case. The administration of jaborandi (℥j [4.] of the fluid extract daily), or of its alkaloid

pilocarpine (one-fifth grain [.01] hypodermatically), has been followed by rapid disappearance of the epidermal accumulation. Locally, soft soap, spread upon muslin and applied like a plaster, produces rapid maceration and removal of the upper layers of the skin, but is liable to be followed by eczema, or other forms of dermatitis. The soap may also be used in the form of Hebra's *spiritus saponis kalinus*, applying it, with friction, daily, or several times a day, and following its use with some soothing ointment, to restrain any eczematous tendency.

Alkaline baths, containing from two to eight ounces [60. to 250.] of carbonate of soda to the bath, are useful in the milder forms. Duhring highly recommends vapor-baths. After the skin has been well softened by the bath, an ointment should be well rubbed in, with considerable friction, constituting a sort of massage treatment. Ointments of various composition may be used (Formulæ 51, 52).

In my own practice, the simple glycerite of starch, so highly recommended by Lailler, has proven very effective in mild cases. The addition of 2 to 5 per cent. of salicylic acid ought to render this still more efficient.

The wearing of rubber gloves, when the disease is localized upon the hands, will keep the skin soft and pliable, especially if combined with one of the above-mentioned ointments.

A permanent effect can only be obtained from any of these measures if their employment is persistent.

HYPERTRICHOSIS—HYPERTROPHY OF HAIR.

Hypertrichosis is an abnormal condition, manifested by excessive growth, abnormal distribution, or heter-

ochronism in development of hair. It may be hereditary or acquired. In some cases the hirsuteness is general, covering, more or less, the entire surface of the body; in others, it is limited to certain circumscribed areas.

The cases of generalized hirsuties, like those of the hairy family of Burmah, the Russian dog-faced people, Julia Pastrana and her child, and "Krao," are generally hereditary. In the Burmese family the hirsuteness is known to have persisted through three generations, while in the other instances mentioned two generations are known to have been hairy.

In the minor degrees of hypertrichosis, such as ordinarily come under the notice of the physician, the hereditary tendency is also marked in the greater number of cases. For example, a moustache and beard not infrequently "decorate" the female members of a family through several generations. In males this is often strikingly manifested in the hairiness of chest and limbs.

Hypertrichosis may also be acquired by those not hereditarily predisposed. There seems to be some connection, although it has never been satisfactorily explained, between disorder of the genital function and overgrowth of hair on the face in women. The facts on record bearing upon this problem are, however, too few and too indefinite to permit satisfactory conclusions to be drawn.

It has been observed that insane women frequently develop hypertrichosis of the face, and some writers have concluded that the aberration of mental activity bears relation to the hirsuties, but there are reasons to believe that in some of these cases the hypertrichosis existed before the mental disturbance became apparent. Most women are exceedingly sensitive upon the point

of their personal appearance, and, as a growth of hair upon the face is considered an attribute of masculinity, the hairs are assiduously plucked out, or removed at frequent intervals with chemical depilatories. When mental alienation has become established, less attention is paid to personal appearance, and the hairs are permitted to grow at will. It is not improbable, likewise, that the very presence of the hairy growth in a sensitive woman may be an exciting cause of insanity. It is, at all events, a matter of common observation that most women with pronounced beards or moustaches are predisposed to melancholy.

Certain neurotic and irritative conditions may cause overdevelopment of hair. Possibly the hypertrichosis of insane women may be looked upon as a manifestation of the neurotic form. Others are seen in some cases of hairy nævi, where the pigmentary overgrowths evidently occupy the area of distribution of certain cutaneous nerves. The patch of hair over the spinal defect in spina bifida may also be considered a form of neurotic hypertrichosis.

Surgeons not infrequently observe an overgrowth of hair in the vicinity of wounds or ulcers, especially if irritating applications have been used. Thus, I have seen a pretty free growth of long, dark hair upon a limb dressed daily for a long time with carbolized oil. The hairs usually fall out, however, after the irritation ceases, if the growth is in an abnormal situation.

A curious relation has been observed to exist between the development of the hair and the teeth. In nearly all the cases of universal hypertrichosis hitherto recorded, the teeth were defective. A striking exception was the case of Julia Pastrana, who, in addition to marked hirsuties, had a double set of teeth in each

jaw. A remarkable contradiction to the rule, in cases of hairy human beings, is the observation of Darwin that hairless dogs have defective teeth.

Unna believes that hirsuties is an example of arrested development. At first thought this sounds like a paradox, but the theory is a very plausible one, although I do not think it accounts for all the facts. It is known to embryologists that the fœtus during intra-uterine life becomes thickly covered with hair, which usually falls out before birth, and which is often discovered in the liquor amnii. Sometimes, however, this ante-natal lanugo hair remains until the child is several weeks old. According to Unna, the post-natal normal hair-growth is of a totally different type from the ante-natal lanugo. In hypertrichosis, however, the normal change of type does not take place, and the pre-natal type of growth continues. Hence, hypertrichosis may be looked upon as an arrest of development, in which the evolution from the fœtal to the post-natal type of growth has not occurred.

I have elsewhere[1] given my reasons for not accepting this theory of the distinguished German dermatologist.

The practical ingenuity of an American physician has given to the profession a means of permanently removing abnormal development of hair. In 1875 Dr. C. E. Michel, a prominent ophthalmologist of St. Louis, described a method of permanently removing ingrowing eyelashes by means of the electrolytic current. Dr. Hardaway, of the same city, tried the method in hypertrichosis, and was able, a few years afterward, to report entire success in removing the hairy overgrowth.

[1] "Studies in Hirsuties," Transactions of the Ninth International Medical Congress, vol. v.

During the last eight or nine years the method has been largely employed, and always, in competent hands, with entire success. I have used it very extensively, since 1882, with the greatest satisfaction. The verdict of all qualified observers to-day is that the electrolytic destruction of superfluous hair is no longer in the experimental stage, but a recognized operation, and, when properly performed, fulfilling all the claims made by its advocates.

For removing hair by electrolysis the following qualifications, instruments, and appliances are necessary :—

1. A plentiful stock of patience.
2. A steady hand.
3. Good eyesight.
4. A suitable battery.
5. Proper electrodes.
6. A pair of cilia forceps.
7. A chair with head-rest.

Without the first three natural qualifications mentioned no one should undertake the treatment of a case of hypertrichosis by electrolysis. Defective eyesight may be aided by suitable glasses, but no substitutes can be found for the other two, and a lack of them disqualifies one from properly performing the operation.

A suitable battery is any one that will furnish an even, constant current of moderate intensity. The Waite and Bartlett, Fleming or McIntosh batteries (zinc-carbon elements), the Barrett chloride-of-silver battery, or the Leclanché cell will answer. I have used all of these except the Barrett battery. With the latter I have had no experience, but it seems to be an excellent instrument for the purpose on account of its easy portability. My favorite battery for electrolysis

is the Leclanché. It furnishes a perfectly constant, even current, is easily managed, and does not get out of order. The only objection to this battery is that it is not portable, and can, therefore, only be used at one's office. Of this battery I use from six to fifteen cells, according to the sensitiveness of the skin or condition of the battery, always beginning with the smaller number and increasing the strength of current if necessary. If the battery has a rheostat, this can be used for regulating the intensity of the current.



When one of the zinc-carbon batteries is used, from four to six cells furnish a sufficiently strong current while the fluid is fresh. After a time the number of cells may be increased as necessary.

A milliampèremeter should always be used in electrolytic work. In eradicating hairs the current-strength may vary from one to four milliampères.

It should be remembered that the battery needed is one that furnishes *a constant current. A faradic battery will not answer for electrolysis.*

The ordinary sponge-covered disk will answer for the positive electrode. For the negative a needle-holder and fine needle are necessary.

The holder shown in the cut was devised by Dr. Hardaway, and is made by the A. M. Leslie Company, of St. Louis. It is very convenient. A fine steel sewing-needle (No. 12) may be used, but flexible needles made of an alloy of platinum and iridium are preferable. They are thinner

than the finest steel needles, never break, and can be bent into any shape desired.[1]

The forceps should have an easy spring, with flat, lightly-serrated jaws, and should not have a catch.

A chair with a firm head-rest must be used. I use an ordinary cane-seat arm-chair, with adjustable head-rest, and find that it answers the purpose as well as a more complicated or expensive oculists' or dentists' chair.

The steps of the operation are as follow:—

The patient is placed before a good light—avoiding direct sunlight unless modified by frosted glass—and directed to take hold of the handle of the sponge-electrode, the sponge, of course, having been previously moistened. The operator then sits a little in front of and to the right of the patient, and takes the needle-electrode in his right hand, holding a pair of tweezers with flat, narrow jaws in his left. The needle is then gently insinuated into a follicle by the side of the hair until the bottom of the follicle is reached. This is manifested by a slight resistance to the onward passage of the needle. The patient is then directed to touch the sponge with the other hand, thus closing the circuit. The current will immediately pass, and the electrolytic action be made manifest by a little frothing around the needle. In some skins also a little wheal will be raised about the follicle. In from twenty to forty seconds the hair can be extracted with the tweezers without the slightest resistance or pain. If the hair does not come away with perfect ease, the papilla has not been destroyed, and the needle should be permitted to remain and the current to pass a little longer. The current is broken by removing the hand from the sponge-electrode.

[1] The needles are also manufactured by the A. M. Leslie Company, of St. Louis.

This gives less pain than if the current is closed and opened with the needle.

If the hairs are very close together, they should not all be removed at the same time. The hairs should be picked out here and there; otherwise the points of irritation will be in too close proximity, and, if sufficiently intense, may produce small areas of sloughing and leave scars. If the operation is properly performed, no visible scars should remain. A sitting may last from fifteen to thirty minutes. Very few operators can extend it beyond the latter time. The sittings may be repeated every other day, or, in cases where time is important, every day. After the operation, a mild astringent lotion may be applied, and the patient should be directed to bathe the surface operated upon several times a day, with hot water, for five or ten minutes at a time. This tends to reduce any hyperæmia which may have been caused by the operation.

When the hair-papilla has been thoroughly destroyed the hair cannot be regenerated. In most cases, however, a number of the hairs return, showing that the destruction of the papillæ has not been complete. This happens in from 5 to 25 per cent. of the hairs removed, and depends partly upon the skill of the operator and partly upon the direction of the hairs. In some cases, the hair-shaft in the skin is so twisted that it is almost impossible to strike the papilla. Such hairs often require repeated removal before they are finally destroyed. The greatest success will usually be obtained on the upper lip and chin, while the hairs under the jaw will frequently return again and again, to the great disappointment of both patient and physician. Partial failure should not discourage the operator. Persistence will surely be rewarded by success.

I may add, that the older the growth of hair the more satisfactory will be the result. In young persons new hairs continually appear, which sometimes lead the patient to think that the operation is unsuccessful, and that all the hairs are returning. The fact of the continued growth of the hair should be explained to the patient before beginning the operation. In older persons, where the growth is complete, the new crop consists simply of those hairs which had not been destroyed and which grow out again. A second removal is followed by still fewer returns, and, finally, complete success is obtained. In younger individuals this period is longer deferred, on account of the above-mentioned outgrowth of new hairs.

Where electrolysis cannot be used, the hairs may be removed by chemical depilatories. Among those recommended in the books, Formulæ 53, 54, and 55 are least likely to produce irritation of the skin. They should not be advised, however, unless circumstances demand a rapid removal of the hair. Their use is often followed by dermatitis or eczema.

Unfortunately, depilatories are only palliatives, as the hair always returns, frequently with more vigorous growth; hence, they must be used constantly (every week or two), in order to keep the deformity out of sight. After their use, a dusting-powder should be applied, to diminish the irritation of the skin.

III. Hypertrophies of the Connective-Tissue Layers.

Scleroderma—Hide-bound Skin.

This is a rare disease of the skin, the returns of the American Dermatological Association showing a proportion of about 1 in 4000 cases of skin diseases of all

kinds. It is characterized by a dense, unpliable transformation of the skin, usually of slow development. The surface affected may be limited in extent, or, as in cases reported by Schwimmer, involve the entire surface.

There are usually no subjective symptoms, except such as result from defective mobility or pliability of the skin.

If the sclerotic patch is in the neighborhood of a joint, the movements are interfered with. In a case reported by Hilton Fagge, in which the disease was localized in the face, the movements of the mouth and jaws were so much hindered that the patient starved to death on account of inability to eat. Sometimes, however, there is pain, tingling, or itching. The skin may be of a white or yellowish color, but is usually more or less pigmented. In one case under my care the skin was dry, hard, and of a dull-brown tint.

Morphœa, which apparently depends upon the same pathological conditions as scleroderma, has many clinical points of difference, and is usually described as a separate affection by American dermatologists. In this disease there are whitish or mottled, hard, round, oval, or elongated plaques, surrounded by a bluish or pinkish border. The hard border in morphœa is distinctly marked to the touch, while in scleroderma there is no distinct line of demarcation between the diseased and normal skin. The subjective symptoms of morphœa are similar to those of scleroderma. The German authors make no distinction between the two affections.

The pathological process appears to be at first a hypertrophy of connective tissue, followed later by an atrophy. In spite of the many histological studies by competent observers, the nature of the disease is not

yet well understood. Schwimmer believes it to be a trophoneurosis. Unfortunately, this explanation adds little to our knowledge of the affection.

The etiology is obscure. We only know that it is about four times as frequent in women as it is in men. Westphal has found morbid changes in the brain and Schwimmer peripheral nerve-lesions, in cases examined by them.

The disease sometimes gets well spontaneously, but the prognosis is unfavorable. Internal remedies have no apparent influence upon the progress of the malady. In a case seen by me massage with inunction of codliver-oil and the internal administration of large doses of tincture of chloride of iron resulted in a cure. Whether the effect is to be ascribed to the treatment is uncertain.

Galvanism has been used by some with asserted benefit. In one of Schwimmer's cases of universal scleroderma, galvanization of the sympathetic resulted in almost complete recovery after eighteen months' continued treatment.

Alkaline, iron, salt and vapor baths, frictions with unguents or oils, the internal use of iron, quinine, or other bitter tonics are recommended by various authors.

SCLEREMA NEONATORUM—INDURATIVE ŒDEMA OF THE SKIN OF THE NEWBORN.

Sclerema neonatorum, or sclerœdema, as it has been well called by Soltmann, is exceedingly rare in the United States. In nearly 90,000 cases of skin diseases of all kinds reported to the American Dermatological Association, not a single case of this affection is recorded. Meigs and Pepper, in their encyclopædic work on the "Diseases of Children," refer to one case occurring in the course of atelectasis pulmonum, and Hyde

refers in an indefinite manner to several cases seen by him.

Indurative œdema of infants usually occurs before the sixth day of extra-uterine life. The children are languid, somnolent, and suckle with difficulty. The respiration is shallow, irregular, and slowed. Pulse and heart's action weak. Temperature much below the normal, in 1 case seen by Soltmann sinking to 60° F.

The skin is tense, yellowish white, or mottled, and spotted with ecchymoses. The œdematous surfaces are firm and resisting, but will pit slightly on pressure. The induration usually begins in the calves of the legs and gradually extends over the body.

The disease has no relation to scleroderma of adults. It generally occurs in weak, prematurely born infants. Unfavorable surroundings, defective nourishment, insufficient protection against cold, and probably want of care and attention seem to be causative factors. The fact, however, that even in France and Germany, where the disease is comparatively frequent, few cases are seen in private practice and nearly all in foundling asylums, points to a possible source of the disease in contagion or infection.

The prognosis is exceedingly grave. The average mortality is from 80 to 90 per cent. According to Rayer, the recoveries are only from 1 to 2 per cent. Soltmann has never seen a case recover.

In view of this mournful prognosis there can be little question of treatment. Keeping the little patient warm, giving stimulants internally, and applying embrocations externally comprise all the measures available.

ELEPHANTIASIS ARABUM—ELEPHANT'S LEG.

Elephantiasis arabum is endemic in tropical countries, but is found sporadically in all parts of the world.

It consists, essentially, of an obstruction and dilatation of lymph-ducts, with consequent hyperplasia of connective tissue. The disease is sometimes congenital, but in the great majority of cases is acquired. It is neither hereditary nor contagious.

The congenital form of elephantiasis has been well described in an exhaustive monograph by Dr. Samuel C. Busey, published under the title of "Congenital Occlusion and Dilatation of Lymph-Channels."[1] In this form there is great enlargement and grotesque deformity of one or more limbs. The skin is thickened, but not hard or discolored, although sometimes studded with irregular, soft elevations, which represent dilated lymphatic vessels. In a case which I had the opportunity of seeing, through the courtesy of Dr. T. B. Evans, of this city, the part affected was the left arm. The patient was a white child, otherwise well developed, but with great thickening and distortion of form of the affected limb.

In the acquired form the disease is usually limited to one leg, although sometimes both limbs are affected. It also not infrequently attacks the genital organs, involving scrotum and penis in the male, the labia, clitoris, and mammary gland in the female; the lips, ears, or eyelids may also be the seat of the disease. I have seen one case, affecting the lower lids, in a middle-aged colored woman. The elephantiasis had followed an attack of erysipelas. I have also seen it affect the skin surrounding the anus, as a consequence of extensive neglected hæmorrhoids.

Elephantiasis, as seen in temperate latitudes, is usually preceded by repeated attacks of erysipelatous inflammation. The inflammatory condition seems to

[1] New York: Wm. Wood & Co., 1878.

leave an obstruction of lymph-channels, which results in an accumulation of lymphatic fluid and consequent overproduction of connective tissue, having as effect thickening of the skin alone; or the subcutaneous structures, including nerves, muscles, and bones, may be involved. The part affected becomes very much enlarged, firm, but, in the early stages, pitting on pressure, and is generally more or less deformed, the normal shape of the limb or organ being lost as the malady progresses.

The surface of the skin may be smooth, or rough, scaly, and uneven. It is often covered by shallow, indolent ulcerations.

When the scrotum is affected it often grows to enormous size. Cases have been reported where the scrotal tumor has weighed over one hundred pounds. The labia and clitoris are also much enlarged in some cases. Pruner, who saw many cases of this disease in the East, says that scrotal elephantiasis is never preceded by erysipelas, and that the affection begins in a small, hard lump in the lower portion of the scrotal sac; but Manson's observations seem to contradict this. The testicles are not affected.

The labia and clitoris are also very much enlarged in some cases. In many of the cases of elephantiasis pudendi, in temperate climates, there seems a close connection between syphilis and this disease.

In Egypt, India, China, and South America elephantiasis is very frequent. Dr. Patrick Manson, of China, has expressed the opinion, indorsed by Fayrer, Lewis and Cunningham, and others in India, that elephantiasis is due to an animal parasite,—the *filaria sanguinis hominis*, which produces either embolism or inflammatory obstruction of the lymphatic vessels and

glands.[1] Dr. Manson thinks he has shown that elephantiasis arabum, lymph-scrotum, and chyluria are all related diseases, and produced by the presence of the organism mentioned in the blood and lymphatic vessels.

Outside of the endemic elephantiasis districts the disease is not produced by the filaria; but the essential pathological condition, occlusion of lymph-vessels and glands, and consequent new formation of connective tissue, is the same. It is not improbable that the occlusion is the result of irritative inflammation in the lymphatics, and not of parasitic embolism, as supposed by Manson. This would explain those cases following erysipelatous and syphilitic inflammations. Dr. Mapother[2] believes that a dependent position of the part attacked is the principal condition prerequisite to the development of elephantiasis, as the lymph is obliged to rise against gravity, and any cause which produces inactivity of the muscles promotes lymph-stasis and exudation with consequent hyperplasia of connective tissue.

Elephantiasis arabum should not be confounded with the disease called by the same name by the old Greek writers (elephantiasis Græcorum). The latter disease is true leprosy. As they do not resemble each other except in name, no difficulty is likely to arise in the differential diagnosis.

In the early stages, before the proliferation of solid elements, appropriate treatment is often followed by much improvement. The inflammation is to be combated by ordinary antiphlogistic measures, and absorption of the effused lymph promoted by bandaging, the application of mercurial ointments, and the administration of iodide of potassium.

[1] Manson: The Filaria Sanguinis Hominis. London, 1883.
[2] Philadelphia Medical Times. November 15, 1887.

The constant galvanic current has been used with success by Brazilian physicians. From what is now known of the absorptive powers of the cataphoric current, this seems a rationally indicated mode of treatment.[1]

Compression or ligation of the vascular supply of the affected part has been resorted to, but, except in recent cases, with little benefit. Amputation of the affected limb was first done by the late Dr. J. M. Carnochan, of New York. It is, of course, a radical measure. When the scrotum or pudendum are involved, amputation is the only mode of treatment indicated. Morton excised a portion of the sciatic nerve with asserted benefit in one case. Internal remedies are of no avail, except to relieve symptoms, or in the early stages, as mentioned.

Atrophies.

Atrophic disorders of the skin may affect the connective tissues of the skin, the pigment, or the hairs.

Atrophia Cutis—Atrophy of the Connective-tissue Layer of the Skin.

The most familiar form of atrophy of the skin is that which occurs in the form of whitish, bluish, or pinkish lines on the abdomen of women, and which usually indicate a previous pregnancy. This atrophic condition is due to excessive distension of the skin, and therefore not due solely to pregnancy, but to any cause which may give rise to excessive stretching of the skin. Hence these *striæ atrophicæ* are also found in ascitic or corpulent persons, as has been pointed out by Joseph Frank in the early part of this century.

In some cases the atrophy is due to a trophoneurosis. Wilson has described cases of linear atrophy due to

[1] See Liebig and Rohé: "Practical Electricity in Medicine and Surgery." Philadelphia, 1890, p. 373.

nerve influence. Schwimmer gives details of a case of universal cutaneous atrophy in a woman 25 years of age, in which there was marked degeneration of the cutaneous nerves.

In the rare affection known as unilateral atrophy of the face, the skin is usually involved along with the muscles and other tissues.

In old age more or less atrophy of the cutaneous tissue takes place, which has been thoroughly studied by Neumann. In this form there is a diminution of the tissue of the cutis, resulting in shrinking and thinning of the same. This is attended by alterations in texture designated as fine granular degeneration, senile shrinking, vitreous degeneration, and other modifications of nutrition. The atrophy of connective tissue is often accompanied by epithelial hyperplasias, such as warts, keratosis senilis, and sometimes atypical epithelial new formations (true epithelioma).

Senile atrophy of the skin is frequently accompanied by intense itching, the condition usually termed pruritus senilis in the text-books.

In most cases, very little can be done for the relief of cutaneous atrophy. The wrinkled skin of old age and of lean persons can be much improved, however, by a system of local treatment designed to improve its nutrition. Systematic manipulation (massage), with the conjoined inunction of codliver-oil, olive-oil, lanolin, lard, spermaceti, or oil of sweet almonds, will produce a marked improvement in appearance in the dry, lustreless, or wrinkled skin of persons of meagre habit, or of those who have passed the prime of life. A combination of 10 parts of spermaceti with 80 or 90 parts of oil of sweet almonds, perfumed to the taste, makes an elegant application. It should be carefully rubbed in at night, after

washing the skin with warm water and a mild soap (pure castile being probably the best for this purpose), or the linimentum saponis of the pharmacopœia may be used as a detergent. In the morning the fat should be washed off with soap and warm water, and some emollient cosmetic lotion (Formula 56) applied.

No treatment has yet been successful for trophoneurotic hemi-atrophy of the face, or for the linear atrophies, or so-called "false cicatrices" of pregnancy.

ATROPHY OF PIGMENT—LEUCODERMA.

Leucoderma means simply white skin. It is due to an absence of pigment in the epithelial layer of the skin. The condition—it can hardly be called a disease—may be congenital or acquired. The most marked forms of the congenital variety are seen in the albinos, which are exhibited in all the curio museums and circus "side-shows" in the country. These individuals are usually the offspring of the darker races, but may be descendants of the white race. In addition to the milky or pink-tinted skin the hair is usually white or light yellow, and the iris red, owing to absence of the characteristic iridian pigment.

The congenital form of leucoderma may also be partial. This is seen not very infrequently in those persons who have a lock of white hair upon the head, or a bundle of white hairs among the beard. This white hair usually grows from a perfectly pigmentless patch of skin.

In the acquired form of leucoderma, generally called vitiligo, the same anatomical condition exists. The white spots or patches are round, oval, or irregular, smooth, with normal sensation and vascularization. They are perfectly flat, and neither elevated above nor

depressed below the level of the skin. There are no subjective sensations, such as itching, burning, tingling, or numbness. The hair upon the white spots sometimes preserves its normal color, and in others is also devoid of pigment.

A peculiar effect is produced upon the non-pigmented patches by intense sunlight. While the normally pigmented skin tans and becomes bronzed by exposure, the white spots either remain unaffected, or become red, inflamed, and painful.

Partial acquired leucoderma is not very rare among negroes, in whom it produces very grotesque effects. The daily papers frequently contain sensational accounts of negroes "turning white," as if the phenomenon was an extremely rare one. In the less extensive forms it is comparatively often seen among whites, and is apparently more frequent in the South. It is usually symmetrical, and seems to be governed to a certain degree by the nervous distribution in the skin.

The causes of the affection are obscure. In some cases a connection can be traced between the disappearance of the pigment and some traumatic influence, but in most instances no etiological relation can be made out. It has no connection, so far as known, with any disorder of any internal organ.

The borders of the white spots are usually a little darker than the normal tint of the skin, giving the impression that the cutaneous pigment is produced in the usual quantity, but is abnormally distributed.

Certain cases of leprosy (lepra maculosa), or the atrophic stage of morphœa, may, on superficial observation, cause mistakes in diagnosis between these diseases and leucoderma, but a careful examination of the lesions will enable one to make the differentiation with the

greatest ease. In fact, it is difficult to see how an observant physician can confound such a simple local disorder as leucoderma with a grave constitutional disease like leprosy.

We know so little of the conditions under which pigment is normally formed in skin, that all attempts to restore it, when absent, must be purely empirical.

The *treatment* of leucoderma has hitherto been very barren of results. In one case, in which I was requested to suggest some remedy, I advised a long-continued course of arsenic, with the apparent effect of producing improvement. Whether the improvement was due to the remedy, or whether it was maintained, I am unable to say. At all events, this remedy is worth trying.

When the affection appears upon the face, the brownish border of the spots, which throws the white surface into strong relief, may be rendered lighter by the local applications recommended against chloasma (*q. v.*).

It should be mentioned that the normal color of the skin sometimes returns spontaneously in acquired leucoderma.

ATROPHY OF THE HAIR—ALOPECIA.

Baldness is either temporary or permanent. It may be due to disease of the hair-follicles or perifollicular tissues, or it may be symptomatic of some constitutional disorder. It is generally classified in the books as premature and senile baldness, but this classification is defective, since many persons reach old age without losing their hair. Baldness is, therefore, not an attribute or necessary consequence of advanced life.

In syphilis, convalescence from fevers, or other grave or depressing diseases, temporary baldness is frequent. In these cases the hair nearly always returns in a luxu-

riant growth; but, unless the hygiene of the scalp is carefully attended to, the defluvium begins again in a short time, attended by seborrhœa or dandruff, and eventually results in permanent baldness.

"Dandruff" is an almost universal precedent of those cases of early baldness not dependent upon some constitutional condition. It is generally regarded by dermatologists as an evidence of seborrhœa, although some observers deny this. The view that dandruff and the consequent alopecia are parasitic affections has been asserted by a number of pathologists, but, up to the present time, no satisfactory evidence has been furnished in its favor.

Parasitic skin diseases, such as ringworm or favus, sometimes cause baldness, which is in most cases only temporary. After the parasite has been destroyed and the irritation of the skin subdued, the hair usually grows again, unless, as in cases of kerion or sycosis, the hair papillæ are destroyed by the intensity of the inflammatory action. The hair sometimes falls out in eczema and psoriasis of the scalp, but is usually restored after the skin disease is cured. Of course, ulcerative diseases which heal only by the formation of cicatricial tissue preclude the regeneration of the hair, where the hair-papillæ have been involved in the ulcerative process.

Early baldness is attributed to many causes, some plausible, many fanciful. Thus, close cropping of the hair, wearing a covering on the head most of the time, and the habitual daily use of water on the scalp have been accused of hastening the falling out of the hair. None of these are, in my opinion, sufficient to account for the alopecia. Thus, soldiers, who keep their hair *closely cropped* most of the time, do not suffer more

from baldness than do other persons. Cleanliness, which is certainly fostered by the ablution of the scalp, should not be accused of producing this deformity, without very definite evidence. The statistics of Ellinger in reference to this point, upon which so much reliance is placed by some writers, require confirmation before they can be accepted without reserve.

The view that the constant wearing of a head-covering tends to produce falling out of the hair is, I believe, entirely fallacious. Persons who keep their heads covered most of the time are, according to my observation, less liable to baldness than those who have the scalp frequently uncovered. In fact, my observation leads me to believe that keeping the head covered with a soft, well-fitting cap or hat tends to preserve the hair. That an ill-fitting hat, compressing the blood-vessels and tissues unequally, interferes with the proper nutrition and growth of the hair is quite plausible and deserves consideration.

There can be no question that heredity plays a part in the causation of baldness.

The striking form of baldness known as alopecia areata, or area Celsi, is probably a neurotic affection, although several prominent dermatologists hold to the view that it is of parasitic origin. The published evidence in favor of the latter is insufficient to overthrow the prevailing belief. This form of alopecia usually occurs suddenly, large bunches of hair coming out over a distinctly limited surface, and leaving the spot completely bare, smooth, uninflamed, and shining. No known parasitic disease has such a history. Besides, the hair frequently grows again without any local parasiticide treatment, although the latter, by its irritant effect, may stimulate the growth to greater rapidity.

The *treatment* of the defluvium depending upon acute diseases comprises such remedies as will raise the general nutrition. In syphilitic alopecia the specific treatment appropriate to the case will improve the capillary growth. In the alopecia of convalescence, cleanliness of the scalp with the daily use of some stimulant lotion are indicated. A combination which I have used with much satisfaction in cases of falling out of the hair in syphilis or after acute febrile diseases is given in Formula 57.

This is to be well rubbed into the scalp nightly. Sometimes the addition of half a dram [2.] of carbolic acid is an improvement. If the hair is very dry the proportion of glycerin may be slightly increased. This prescription is also an excellent one in those cases of baldness not accompanied by dandruff, and in which there seems to be only a deficient force in the growth of the hair.

In the baldness due to or accompanied by dandruff, or dry seborrhœa of the scalp, and which constitutes about nine-tenths of the cases that apply for treatment, I have found the following method very efficient: The scalp is washed two or three times a week with a good tar soap, and afterward a lotion containing either sulphur or resorcin (Formulæ 58, 59) is applied and well rubbed in.

A small quantity of glycerin or castor-oil may be added to either of the prescriptions if the scalp is very dry. If preferred, an ointment (Formulæ 60, 61, 62) may be used instead of the lotion.

A mild ammoniated mercury ointment is also often useful.

The treatment of alopecia areata is often unsatisfactory. The local treatment should be a stimulant

one; lotions or ointments containing capsicum, cantharides, iodine, or similar active ingredients should be used to the bald patches and rubbed in with considerable friction. The galvanic and faradic currents also promise good results. Internally, neurotic tonics; quinine, iron, strychnine, and phosphorus are generally indicated.

NEW FORMATIONS OF THE SKIN.

(By J. Williams Lord, A.B., M.D.)

The new formations of the skin do not differ, pathologically, from these growths in other organs. They often present clinical peculiarities, however, which demand consideration.

I. Epithelial New Formations.

EPITHELIOMA.

The form of carcinoma which is most frequently encountered upon the skin and the adjacent mucous membranes is known as epithelioma, skin cancer, or epithelial cancer.

It is a malignant new growth, composed of epithelial cells, derived from the rete mucosum, which invade the corium and subcutaneous tissue in all directions, replacing and infiltrating the normal elements, and, by their presence, give rise to more or less irritation and inflammation, with subsequent destruction of tissue. It is at first a local disorder, occupying but a limited area of the skin, with a tendency always to progressive extension, both in surface and depth, but often requiring months or years before much advancement is made; it finally involves and destroys all tissues, skin, muscles, fascia, cartilage, bones, and lymphatic glands; metastasis is then liable to occur, and the individual succumbs from septic poisoning or exhaustion.

There are two varieties of epithelioma (the squamous and the cylindrical, or columnar), the distinction between

them resting upon the form of the cell-elements which are present. The former is found upon those parts in which there is squamous or pavement epithelium; as, for example, the skin and the mucous membranes lining the outlets of the body, viz., the mouth, lower portion of the rectum, vagina, etc. The mucous membrane of the gastro-intestinal tract, bladder, uterus, and larynx possesses columnar cells; and hence, in these regions, the cylindrical epithelioma is developed.

The squamous epithelioma alone requires description, as it is the variety commonly encountered by the dermatologist.

It may begin in many ways,—either upon the healthy skin or from various growths, such as warts, moles, or patches of horny seborrhœa. Clinically, three forms of squamous epithelioma are noted, owing to the differences in their mode of development, course, and general appearance. These are the superficial, the deep-seated, and the papillary varieties. They agree, however, with respect to their intimate nature.

The superficial or flat variety involves all portions of the skin, and begins as a slight excoriation or fissure, which refuses to heal, or in the form of one or more small reddish or yellowish papules, placed close together, resembling a wart. In the course of time the growth shows a tendency to crack and fissure, and a thin, sticky, serous fluid, sometimes mixed with a little blood, exudes, which dries into brownish or blackish crusts. These fall off, or are picked off, leaving the surface beneath of a bright-red color; this soon becomes crusted over again; the growth gradually enlarges, both along the periphery and in depth, until it has attained the size of a pea or dime, when it breaks down into an ulcer. The ulcer is usually round or oval, at first quite superficial,

and is covered with a brownish scab, which, when removed, reveals the base of the ulcer, covered with reddish granulations, bathed in a serous, scanty fluid. Its edges are everted and hard. This form of epithelioma lasts an indefinite period,—it may be for years,—causing but slight disturbance, the ulcer finally healing; or else it passes on into the deep-seated variety, with implication of the lymphatic glands.

The deep-seated variety begins in the deeper portions of the corium and subcutaneous tissue, in the form of a firm, hard tubercle or nodule, the size of a pea or bean, distinctly raised above the surface. It increases rapidly in size, is of a reddish or purplish color, and the surrounding skin is found to be infiltrated for some distance and darker in color. This variety is painful from the very beginning, the pain increasing in intensity and becoming lancinating, when the destructive process shows itself. A few months generally suffice for the growth to ulcerate. The ulcerative process starts from the surface or the interior of the growth, and spreads rapidly, causing extensive destruction of all tissues. The lymphatic glands are soon involved, metastasis to other organs may occur, and death takes place in from one to four years, the patient being worn out by pain and exhaustion. The ulcer is deep, round or irregular in shape, with everted or undermined hard edges; its base is uneven, and covered with red granulations; it bleeds readily when touched.

The papillary variety is the result of the invasion of the papillæ of the skin or of the mucous membranes. It is most frequently met with upon the mucous membranes, and appears in the form of a wart, or of a fungating, cauliflower-like growth, varying greatly in size. It also becomes fissured, and finally undergoes

ulceration. It is at first quite superficial, and may last for years, especially when upon the skin; but, sooner or later, it passes into the deep-seated variety. It is the most malignant form of epithelioma.

The regions commonly invaded by the epitheliomatous process are the face, the various outlets of the body, and the genitals. Upon the face the growth usually makes its appearance about the eyelids, especially the inner canthus, cheeks, root and alæ of nose, and forehead; upon the lower lip and tongue, the penis, and scrotum; about the anus and the lower two and a half inches of the rectum; in the vagina, the portio vaginalis of the uterus, and the labia. It may appear, however, upon other portions of the body. The superficial form usually occurs upon the face, the deep-seated upon the lips, and the papillomatous upon the penis, vagina, and rectum.

This disease represents about one-half of 1 per cent. of all skin affections. It occurs much more frequently in males than in females, probably on account of the former being more exposed to the exciting causes. It usually makes its appearance after middle life,—from the forty-fifth to the seventieth year. It is rarely seen under forty years, though cases have been recorded in children. In a few cases heredity can be assigned as a cause. As an exciting cause long-continued irritation plays an important rôle in its development.

Epithelioma upon the lower lip and tongue frequently results from the irritation of a pipe-stem. Chronic ulcers are liable to degenerate into epithelioma; and this is true of syphilitic and lupous ulcers. Scar-tissue from burns and injuries also undergoes this change. Epithelioma is prone to occur in warts, moles, and vascular nævi.

A microscopical specimen of epithelioma shows that the process consists of an inflammatory condition of the skin and the growth of epithelial cells from the rete, in the form of interpapillary prolongations, from which processes are given off in various directions, and unite with each other until, finally, the whole skin becomes invaded by the cell growth. The epithelial cells, through pressure, become arranged in the form of nests or globes. The vascular supply is quite extensive. From the crowding of the cells together the blood-supply is cut off and fatty degeneration ensues; the tissue becomes absorbed, or is cast off by ulceration.

Diagnosis.—Epithelioma is to be differentiated from an ordinary wart, syphilis, and lupus. As a rule, there is but little difficulty in the diagnosis. The following points should be borne in mind: Epithelioma is a disease of middle and advanced life; it is usually a single, painful growth, and occurs in the form of a fissured wart or an excoriation which refuses to heal under treatment. Attention should be paid to the history and course of the disease.

A simple wart does not undergo any change, nor is it painful. Syphilitic lesions, whether tubercles or ulcers, are usually numerous, not attended by pain, run a rapid course, and appear in early adult life. Lupus is a disease of childhood; its lesions are numerous, and it never invades bone.

Treatment.—The treatment consists in the removal of the growth as soon as possible, and a considerable portion of the surrounding apparently healthy tissue. This may be accomplished by caustics, erasion, or excision, and by the galvano-cautery,—methods which are similar to those employed in lupus vulgaris.

II. Connective-Tissue New Formations.

KELOID.

Keloid is a new growth, composed of connective tissue, situated in the corium. It consists of one or more variously sized, irregularly shaped, more or less elevated, firm, smooth, reddish, scar-like tumors.

Two forms of this disease are described, depending altogether upon the mode of origin, for in their intimate nature and external appearance they are identical. In the one form the growth arises spontaneously, and has, therefore, been termed true or spontaneous keloid. In the other variety the growth appears upon the site of a scar, or upon that portion of skin which has sustained an injury, and is known as false or scar keloid. The cause of keloid is not known. It is observed to follow the scars of small-pox, acne, and syphilis; on the site of leech-bites; after vesicular and pustular eruptions; also, after burns by fire or chemicals, surgical operations, and floggings. The growth occurs with about equal frequency in each sex. It is more common in the negro race. It appears usually in adult life, rarely occurring before puberty.

In the beginning, one or more pea-sized or larger nodules, firmly imbedded in the skin, develop and slowly increase, until, in the course of several years, the growth may attain a considerable size, varying from one to two inches in diameter to the size of the palm or larger. The tumor does not enlarge steadily from year to year, but at times takes on rapid growth. Having reached a certain size, the process ceases, and the growth remains throughout life, or else undergoes spontaneous involution.

Usually but one tumor is present, which is firm, raised, circumscribed, sharply outlined, of an oval, elongated,

or irregular shape, flattened and smooth, reddish or pinkish in color. Occasionally it presents processes which spread out like the claws of a crab, whence its name.

The usual seat of the disease is upon the trunk, especially over the region of the sternum and along the intercostal spaces. It may occur upon other portions of the body,—as the neck, lobules of the ear, extremities, and the genitals; rarely is it met with on the face. At times there is pain. Other symptoms—as itching and burning—are often present.

It is a benign growth, and is never attended by ulceration. It is composed of dense bundles of white fibrous, connective tissue, interspersed with few spindle-shaped cells arranged along the blood-vessels. The fibres run parallel to the surface of the skin.

Diagnosis is easy. The disease usually continues throughout life, but occasionally disappears spontaneously.

The *treatment* hitherto followed has not proven of much benefit. Excision of the growth, and even of the adjacent skin, is almost invariably followed by a return of the disease. The same result follows the use of caustics. Multiple scarification, as practiced in lupus, has given some satisfaction, but the best results have followed the use of electrolysis. Hardaway, of St. Louis, and Brocq, of Paris, have reported successful cases. For the relief of pain hypodermatics of morphine or cocaine may be given. Pressure by the elastic bandage is sometimes followed by absorption and disappearance of the growth.

FIBROMA.

Fibroma is a benign tumor, formed of connective tissue, which has its seat in the skin or subcutaneous structures. There may be a single growth.

Usually, however, many are found scattered over the body, scalp, face, trunk, and extremities, varying in size from a pea to a cherry or even as large as a head, sometimes weighing many pounds. They are rounded, semi-globular, or pear-shaped, attached to the skin by a broad base or else by a thin stalk. When single they may attain a great size, and are apt to be pedunculated. The skin over these tumors is loose or tense, of its normal structure and color, or of a reddish hue. They are firm or soft to the touch. There is no pain connected with them, but a feeling of weight and discomfort may attend the larger growths, and they may prove a source of annoyance when occurring upon the scalp or face.

The cause is unknown. Several members of a family may be afflicted, and heredity can be assigned in some cases, as the disease shows itself in several generations. It usually makes its appearance in childhood, growing slowly and progressively, and becoming more pronounced in adult life.

It is of rare occurrence, and usually continues throughout life, but does not interfere with the general health.

It is to be differentiated from molluscum contagiosum, neuroma, and lipoma. Molluscum contagiosum is a superficial growth and presents a central depression, through which its contents can be expressed. Fibroma is deeper-seated, the skin normal.

Neuroma is an extremely painful, very rare affection, and occurs along the course of a nerve.

Lipoma is a soft, lobulated tumor.

Treatment.—Removal of the growths by the knife, when not too numerous; if large and pedunculated, by the ligature or galvano-cautery.

XANTHOMA.

Xanthoma is an affection of rare occurrence, usually met with after middle life. It presents itself in the form of small, yellow patches, or of yellowish tubercles. The patches, varying in size from a pin-head to a pea or larger, are encountered on the eyelids, beginning at the inner canthus. The disease is usually symmetrical. The patches are sharply defined, smooth, on a level with the skin or slightly raised, and resemble pieces of chamois-leather. They increase in size slowly. There are no subjective sensations connected with them. The tubercles are pea-sized and larger, soft, of a yellow color, and occur on various parts of the body, the eyelids being usually exempt. They appear on the trunk, the extremities, over the elbows, knees, and knuckles, and at times are quite painful. Xanthoma is not limited to the skin, but involves the mucous membranes of the mouth, the larynx, and trachea. Patches are found on the internal organs, the liver, and spleen. In a majority of cases the disease is associated with, or preceded by, jaundice. It is of more frequent occurrence in women. It is a new growth, composed of connective tissue and of fusiform and stellate cells, containing yellowish pigment and oil-drops, having its seat in the corium.

Treatment consists in the removal of the growth when necessary by excision or by electrolysis. Care should be taken not to remove too much of the skin in the eyelids, as the resulting scar may cause ectropion.

RHINOSCLEROMA.

Rhinoscleroma is a dense, hard growth, somewhat elevated, more or less flattened and irregular, composed of firm nodules, of the color of the skin, or of a brownish hue. It appears about the alæ and septum of the

nose, extends slowly to the upper lip and to the adjacent mucous membrane. At first the parts are swollen, but not inflamed; the tip of the nose is rigid; the epidermis shows a tendency to crack, and secretes a fluid which dries into crusts. In time the nostrils become partially or completely closed. There are no subjective sensations, except pain on pressure. The general health does not suffer. There is no disposition to involution or ulceration, the growth being steadily progressive and, if removed, rapidly returning. The disease is of rare occurrence in this country. It first shows itself after puberty. The process consists in a round-celled infiltration into the papillæ and superficial layer of the corium, the epidermis being normal.

Treatment.—Removal of the diseased tissue is necessary. This may be effected by caustics, such as the solid stick of caustic potash, of nitrate of silver or pyrogallic acid, or by excision of the growth.

SARCOMA.

Sarcoma of the skin is a malignant new growth, which develops directly from the connective-tissue layer of the skin or from the subcutaneous tissue, subsequently implicating the skin, or it occurs here secondary to its presence in some internal organ or lymphatic gland. Sarcoma, when it invades the skin primarily, usually spreads rapidly over the surface, and by metastasis is conveyed to the internal organs.

It appears as pigmented or non-pigmented tumors, and as fungoid growths. They are single or multiple, usually the latter, and are found all over the body, beginning generally about the hands and feet, on both surfaces, and spread slowly or rapidly up the arms and legs to the face and trunk. The tumors, varying in size from

a shot to a hazel-nut or larger, are smooth, firm, and elastic. At first discrete, they after a time coalesce and give rise to various sizes and shapes. The non-pigmented sarcoma is of a reddish color, while the pigmented is blue or black, somewhat painful on pressure, and occasionally spontaneously painful. They exhibit a tendency to ulceration. Death usually takes place in the course of one to three years, from internal complications or exhaustion. It is a rare disease, more frequent in men, and appears after middle age. It consists of a small or large, round or spindle-celled infiltration into the corium, with more or less pigmentation and hæmorrhages. The growths are quite vascular. A pigmented mole is often a starting-point of the disease.

Treatment is palliative. The disease tends to a fatal termination. Excision of the tumors is invariably followed by a rapid return of the growth. According to Köbner, subcutaneous injections of Fowler's solution of arsenic, from 2 to 4 drops, diluted with distilled water, and gradually increased to 10 drops daily for several months, have been followed by disappearance of the growths.

LEPRA—LEPROSY.

Leprosy is a constitutional, contagious disease, due to a specific poison. It involves all the tissues of the body, manifesting itself by lesions of the skin, mucous membranes, nerves, lymphatic glands, bones, and internal viscera. The lesions consist of new cell formations, and the symptoms, which are both general and local, are the result of this new growth. The disease develops slowly and insidiously, pursues an exceedingly chronic course, and terminates fatally,—either from complications which are liable to ensue within the lungs, kidneys, or intestines, or from exhaustion and the leprous cachexia.

This disease has existed from the most remote periods, and at one time was quite prevalent in Europe. By means of isolation, it was nearly stamped out of Europe at the close of the sixteenth century. In certain countries it is endemic,—notably in India, China, Egypt, along the coasts of Africa, and about the Mediterranean, Spain, Portugal, Norway, Iceland, Australia, the Sandwich Islands, Brazil, Central America, West Indies; several colonies are found in California, Louisiana, and Minnesota; sporadic cases occur elsewhere throughout the United States.

Many symptoms, which are not at all characteristic, usually precede the active manifestations of the disease. These premonitory symptoms may be slight or severe, and may exist for months and years without exciting suspicion as to the nature of the affection, unless occurring in a leprous district. They consist of malaise, languor, weariness after slight exertion, pains in the muscles of the legs, mental hebetude, nausea, occasional diarrhœa, and fever of an intermittent type. In the course of time, the outbreak peculiar to the disease appears. According as one or another form of lesion predominates, or exists alone, different varieties are described. There are two distinct forms (the tubercular and the anæsthetic), and occasionally both are met with in the same individual.

Tubercular Leprosy.—This variety is usually preceded by certain premonitory symptoms, especially by chills and fever of an intermittent type. Erysipelatous inflammations occur from time to time, following which bullæ similar to those of pemphigus appear, localized about the hands or other portions of the body, few or many in number. They rupture and leave pigmented spots behind. Yellowish spots also appear upon the

trunk and extremities, and, in time, become anæsthetic. Sooner or later, yellowish-brown tubercles, varying in size from a pea to a walnut, develop upon the face and extremities. They are close together, with deep furrows between them. Much disfigurement results, the countenance assuming a leonine expression. The tubercles remain unaltered for an indefinite period, absorption occasionally taking place. About the hands ulceration sometimes occurs, and the ulcers are difficult to heal. Tubercles, also, are met with on the mucous membranes of the mouth, pharynx, larynx, eye, and elsewhere.

Anæsthetic Leprosy.—This form is usually preceded by chilly sensations, nausea, and by sharp, darting pains in the course of certain nerve-trunks, numbness, itching, and burning. After a while, pale, yellowish, smooth patches, varying in size and on a level with the skin, with violaceous borders, appear, one after another, until a considerable portion of the body is involved. At first the patches are somewhat hyperæsthetic, and more or less itching and burning sensations are present; later, they become anæsthetic. Even portions of the skin upon which no patches are present become anæsthetic. Bullæ frequently show themselves in an irregular manner, rupture, and leave pigmented spots. The anæsthetic patches occur, for the most part, about the shoulders and back, the hands and feet, and the extensor surface of the limbs. The skin becomes atrophied, more or less wrinkled, and yellow. The subcutaneous tissue, muscles, hair, and glands undergo a similar change. From wasting of the muscles and from paralysis the fingers are contracted and deformed,—somewhat claw-shaped. Ulceration takes place about the *joints, the* process continuing until the fingers drop off.

Sometimes the bones are absorbed, the tissues shrivel, and the fingers become distorted, without ulceration.

Leprosy seems to be moderately contagious. It is probably contracted, by inoculation, during the sexual act. It is due to a specific germ,—the lepra bacillus. Climate, soil, food, and heredity act as predisposing causes. The disease may occur at any age, usually, however, in early adult life. The prognosis is unfavorable; all varieties end fatally, though such a termination may be postponed by judicious treatment. Death ensues as the result of the direct effects of the disease, or from intercurrent complications.

Diagnosis.—No error need arise when the disease is well established. The prodromal symptoms may be mistaken for malaria, but in regions where leprosy is endemic such symptoms should arouse suspicion. The macular and tubercular leprosy is most likely to be mistaken for syphilis. In the latter affection the lesions occur on various portions of the body at the same time, are smaller than those of leprosy, and are not anæsthetic; nor do they remain in one form any length of time. The history of the cases is entirely different. The macular patches of leprosy are large, have a firm feel to the touch, last an indefinite time, and are more or less anæsthetic.

Vitiligo, or leucoderma, is a pigment affection, consisting in the loss of pigment in patches, with an increase along the borders. To the touch, the skin is normal. There are no constitutional symptoms.

Treatment.—Attention should be given to the condition of the general health: change of residence, good food, tonics, hygiene, exercise. There is no cure for the disease. Good results have been obtained from the administration of chaulmoogra-oil and gurjun-oil inter

nally, in doses of 5 to 10 minims, and also rubbed in externally. When there is paralysis, the galvanic current may be employed.

SCROFULODERMA.

This is a localized manifestation upon the skin of a general condition known as scrofulosis. It consists of certain suppurative and ulcerative processes, the result of the deposit of granulation-like masses of cells, either in the lymphatic glands or in the subcutaneous tissue. The disease begins by the involvement of the lymphatic glands or by the development of subcutaneous nodules, which slowly enlarge, become prominent, unattended by inflammatory symptoms, and are freely movable beneath the skin. The glands remain in this condition an indefinite period, but, sooner or later, soften and break down, the skin becoming adherent, of a dull-red or violaceous color; suppuration occurs, an abscess forms, with, finally, a discharge of a thick, creamy, cheesy pus, or of a thin, sanious fluid. The resulting ulcer is oval or irregular in outline, with thin edges; the adjoining skin of a violaceous color, and more or less undermined by sinuses, which burrow in various directions. The base of the ulcer is uneven, covered with pale, flabby granulations, bathed in pus, which bleed readily. The ulcer secretes a thin, scanty fluid, mixed with blood, which dries into thin, brown crusts. The ulcerative process is slowly progressive, and shows no disposition to heal. The scars which form are hard and contracted. The ulcers are seen frequently about the neck and face, though few in number. Other evidences of the strumous condition are generally present, such as enlarged glands, otorrhœa, blepharitis, coryza, and joint affections.

All those conditions which impair the general health act as predisposing causes, as heredity, bad food, dark, damp dwellings, impure air, and the like. The active cause is the tubercle bacillus.

The disease appears in childhood or early adult life, and is more frequent in the colored race.

The *treatment* consists in the internal administration of alteratives, the syrup of the iodide of iron, codliver-oil, etc. The enlarged glands should be removed. If suppuration has occurred, open and scrape away all of the diseased gland by the dermal curette; follow with iodoform ointment, 1 drachm to the ounce [1 to 8]. The granulations will need stimulation occasionally with the solid nitrate of silver.

LUPUS ERYTHEMATOSUS.

It begins by the formation of small, red, or violaceous patches, one or more in number, from a pin-head to a pea in size, sharply defined against the sound skin, slightly elevated at the margin, the surface smooth, or covered with scanty, thin, or thick, grayish, sebaceous scabs, more or less firmly adherent; and these, when removed, show prolongations on their under surface, which dip down into enlarged sebaceous follicles. Comedones are met with along the border. The individual patches increase in size by peripheral extension, and may assume large dimensions. Many of the patches coalesce, various shapes resulting. The patches are usually round or oval, but may be irregular. With the enlargement along the border, the central portion undergoes a retrograde change, becoming depressed, pale, and atrophic. The disease pursues an exceedingly chronic course, lasting for years, with periods of quiescence, of improvement, and of rapid advancement.

After awhile it remains stationary. Spontaneous involution may occur, the skin returning to its normal condition, or else it is replaced by thin, atrophic scars. Frequently the process lasts throughout life.

The region invaded is, in the majority of cases, limited to the nose and cheeks. Beginning on the bridge of the nose, it spreads symmetrically over the cheeks, assuming the figure of a butterfly. It is met with, however, on all portions of the body, next in frequency upon the tip of the nose, the lips, ears, forehead, scalp, hands, feet, and trunk.

In some instances, the disease begins in the form of small, pea-sized patches, scattered over the body. These do not enlarge, but, by the development of new lesions, ultimately almost the entire surface may be invaded. This variety is attended with severe constitutional symptoms, and in many cases is fatal.

Lupus erythematosus is the result of a small-celled infiltration into the corium, beginning around the sebaceous glands and hair-follicles, in most cases. Any part of the corium, however, may be the starting-point of the disease; the superficial as well as the deep layer. It may begin, also, in the neighborhood of the sweat-glands. Sometimes the cells are absorbed, and the skin returns to its normal state; at other times, partial degeneration and absorption occur, followed by the development of new connective tissue and scars.

The process is always a dry one; pus never forms. The lesions are firm to the touch.

This affection is met with mostly after middle life. Women are more liable to this disease than men. Those causes which produce a seborrhœa may aid in its development. It is of rare occurrence. The general health

remains good, except when the disease is in a disseminated form.

When fully developed, the *diagnosis* is easy. The following points are characteristic: The age at which it begins; the sharply outlined, raised margin; the symmetrical arrangement; the color; the atrophic change in the central portion of the patch; its closely adherent sebaceous scales, with prolongations into the follicles; its chronic course, and the absence of ulceration.

Lupus vulgaris, while limited, for the most part, to the face, nevertheless differs from lupus erythematosus in many respects. It is a disease of childhood; the patches are composed of papules and tubercles, with subsequent ulceration and scarring.

An eczema is of a brighter-red color; the edges are not raised, but fade away gradually; itching is severe, and there is always a history of oozing, at one time or another, in its course; its features change often.

Treatment.—Constitutional treatment proves of slight benefit. Codliver-oil, arsenic, phosphorus, iodide of potash, and a general alterative course may be tried. Most good is to be derived from local measures. Sapo viridis, rubbed in or allowed to remain for some time, applied on cloth; mercurial plasters. An ointment of the bichloride of mercury, gr. ij to ℥j [1 to 250]; pyrogallic acid, ℈i–ij to ℥j [1–8 to 1–4] of ointment, kept in contact with the part for several days, acts as an escharotic. Multiple scarifications and the use of the galvanocautery may be tried, but in many cases no form of treatment is successful.

LUPUS VULGARIS.

This disease, sometimes spoken of as lupus exedens, or noli-me-tangere, is a local tuberculosis of the skin.

It is due to the invasion of the cutaneous structures by the tubercle bacillus, which, acting as a source of irritation, produces a cellular infiltration into the meshes of the connective tissue in the deeper portions of the corium. The cells are collected into small nodules, freely supplied with blood-vessels, and sharply marked off from other parts of the corium by firm connective tissue. In the course of many months or years, the whole depth of the skin may become invaded by the cell-growth.

The disease manifests itself upon the skin by the formation of reddish or brownish patches, variable as to size and shape. The process begins by the development of small, pin-head-sized, soft, reddish papules, deeply seated in the skin, one or more in number, discrete or close together. These increase in size slowly and become tubercles, which coalesce, giving rise to patches. The patches enlarge by the appearance of new tubercles along the periphery. The further appearance of the disease depends upon the change which the lesions undergo. Sometimes the cellular deposit is absorbed, the skin returning to its normal condition. More frequently, however, fatty degeneration occurs, followed by ulceration and scarring. The ulcers are usually round, shallow excavations, with reddish granulations covering their bases; the edges are soft. They bleed readily, and secrete a thin fluid, which dries into brownish crusts, beneath which the destructive tendency proceeds. The granulations sometimes take on excessive growth. The ulcers finally heal, with the formation of scar-tissue, which may be white and soft; but, when the scars cover a large extent of surface, they are contracted, irregular, hard, and uneven, and cause much disfigurement.

Lupus vulgaris begins almost invariably in childhood, generally after the second year, and may appear at any time before puberty. It is seldom encountered after that period for the first time. It occurs more frequently in females. It is a rare disease in this country. It involves the skin and mucous membranes, and may even spread to and cause destruction of cartilage, but it never invades the bone. The usual situation of the disease is about the regions of the nose and cheeks. When it has existed for any length of time, all stages of the disease may be present,—papules, tubercles, ulcers, crusts, and scars. It is prone to extend from the alæ of the nose and the lips to the mucous membranes of the nose and mouth. Other regions invaded are the ears, hands, feet, mucous membranes of the larynx and conjunctiva.

The course of this disease is steadily progressive, lasting for years. It is exceedingly destructive to the tissues which it involves. Under treatment it can be favorably influenced, and sometimes cured.

Diagnosis.—Lupus is to be differentiated from syphilis, epithelioma, lupus erythematosus, acne rosacea, and squamous eczema. Syphilis, especially in its ulcerative stage, is most likely to be confused with lupus, but the course and history of the two affections are quite different. Lupus vulgaris begins in childhood; its lesions consist of papules, tubercles, ulcers, and scars, which last an indefinite period, slowly passing from one form to another. Syphilis is a disease of adult life. The lesions appear rapidly, and undergo change quickly. The ulcers of lupus are small, shallow, and covered with a thin, brownish crust. Syphilitic ulcers are deep, with rounded edges, and covered with thick, dirty, green crusts. The scars of lupus are hard and

irregular, while the scars of syphilis are smooth and soft.

Epithelioma differs from lupus. It begins usually after middle life. The epitheliomatous ulcer is single, painful, spreads along its edges, and also in depth, invading all tissues, even the bone. The edges are hard and everted, the base uneven, covered with red granulations, which bleed easily, and thin, brownish crusts form.

Lupus erythematosus begins in adult life, and consists of red patches. The disease is symmetrical; it is never attended by ulceration; the surface of the patch is covered with scales; the sebaceous follicles are enlarged.

Acne rosacea sometimes bears a resemblance, but can be distinguished by the dilated vessels, acne pustules, and absence of ulceration.

Squamous Eczema.—The length of time lupus has existed in a small area, its raised margins, and the absence of oozing distinguish it from this disease. Eczema changes from one form to another, and appears quickly.

Treatment.—Attention should be paid to the general condition of the patient; to his diet; to his surroundings. Good, nutritious food, alteratives, codliver-oil, iodide of potassium, iron. In most cases, local measures only are needed. These are employed for the removal of the diseased tissue. They consist of cauterization, scarification, erasion, and excision. The particular method to be employed depends upon the stage of the disease, the extent of surface, and the region involved. When only a small area is to be treated, or the lesions are discrete, caustics may be used. The solid stick of nitrate of silver is to be bored into the papules and

tubercles. Upon the patches nitrate of silver may be used in solution. Pyrogallic acid, 1 or 2 drachms to the ounce of ointment [1–8 to 1–4], applied upon a piece of cloth for several days, will cause destruction of the diseased tissues. Arsenic is employed for the same purpose, but it is quite painful. The tissue is sometimes destroyed by the actual cautery or by the galvano-cautery, or it may be removed by the dermal curette, a sharp, spoon-shaped instrument, followed by the application of solid nitrate of silver or the pyrogallic-acid ointment. Good results are obtained by this method. Multiple scarifications are also used. Hardaway has reported success with electrolysis. Treatment by Koch's lymph has proved a failure.

AINHUM.

A disease which occurs in the negro race, and is met with in the Southern States, in Africa, and in South America. It consists of a narrow, cord-like constriction, about the digito-plantar fold of the little toe, beginning on the inner and under surface. It spreads slowly, until, in the course of several years, a complete ring is formed. A deep furrow results, and in time the circulation is cut off, ulceration or gangrene is established, and the toe drops off. The distal portion of the toe swells up to two or three times its natural size. There is reason to believe that the constriction is produced by tying a string around the toe. At first only itching is present; later, however, there is intense pain. When seen early the process may be stopped by incising the band; later, amputation is necessary.

PODELCOMA.

This disease is endemic in India, but is not limited to that country, a case having been reported in America.

It attacks various regions of the body, though usually limited to the foot, and is sometimes described as the Madura foot, or fungous foot of India. It begins by a swelling of the part affected; numerous soft, pea-sized tubercles form over it; sinuses lead down to the deeper structures, and a discharge occurs, more or less glairy and containing blackish nodules compared to fish-roe.

The disease progresses slowly; the destructive process involves all the tissues, muscles, fascia, and bone, until utter disintegration ensues. The foot becomes deformed, and the patient is unable to walk on account of the severe pain.

The nature of the disease is not known, but it is supposed to be of parasitic origin. When the process is not far advanced, removal of the diseased tissue is called for; later, amputation is required.

MYOMA.

This is an exceedingly rare disease of the skin. It exists as single or multiple disseminated tumors, consisting of smooth or unstriped muscular tissue. The multiple tumors, which are met with over the trunk and extremities, varying in size from a pea to a bean, are flat, raised, round and oval, usually painful growths, freely movable and of a pale-red color. They occur generally late in life.

The solitary tumors are more common and attain a larger size, usually that of a walnut; are sessile or pedunculated; not painful, as a rule; and are met with about the breast and genital organs.

Sometimes there is considerable fibrous tissue mingled with the muscular fibres (fibro-myoma), or blood-vessels may be highly developed (angio-myoma), and occasionally its lymphatics are involved (lymphangio-myoma).

The tumors may be excised; they do not recur.

NEUROMA.

There are but few cases recorded of this extremely painful growth. It consists of small, multiple, pea- to hazel-nut- sized, flat, round, or tubercular nodules, which have their seat in the skin, but may extend into the subcutaneous tissue. They are immovable and painful on pressure. Painful sensations of a paroxysmal nature occur and last for hours. They are found along the upper or lower extremities crowded closely together. They develop slowly over a period of many years. Their intimate structure is composed of fibrous tissue and non-medullated nerve-fibres. Excision of a portion of the nerve-trunk which supplies the region affected is followed sometimes by a cure, the tumors disappearing. At any rate, marked relief from pain is obtained.

PERFORATING ULCER OF THE FOOT.

This occurs as the result of pressure or injury to a part, of which the nervous supply is defective. It is thus seen in connection with locomotor ataxia, in which the spinal centres are at fault; in syphilis and leprosy, in which deposits take place along the nerves; and in peripheral neuritis. The ulcer forms always on the sole of the foot, at the junction of the tarso-metatarsal joints of the large or small toe, and consists of a small aperture, surrounded by thickened epidermis, leading down by a narrow sinus to diseased bone. There is no discharge from the ulcer, nor is pain connected with it. There may be more than one ulcer upon one or both feet. The affected foot perspires freely.

Treatment.—The foot should be kept at rest, or suitable pads employed, so as to relieve the part from pressure. Amputation has been resorted to, but this is unsatisfactory, as ulcers form upon the stump.

III. Vascular New Formations.

LYMPHANGIOMA.

Lymphangioma appears in the form of one or more groups of deep-seated vesicles, upon a limited area of the skin. The vesicles are pin-head-sized and larger, with thick walls, which, when opened, discharge a clear, colorless fluid. They are colorless or of a pinkish hue. The regions invaded are the face, neck, shoulders, and extremities.

Another form, designated lymphangioma tuberosum multiplex, consists of numerous pea- to hazel-nut- sized tubercles, which involve the trunk uniformly. They are smooth, firm, elastic growths, of a brownish color, and under pressure can be made to disappear into the skin, but re-appear immediately.

Lymphangioma is in many cases a congenital disease, or it may begin in early life. It pursues a slow, chronic course. Subjective sensations are absent. The affection is the result of the enlargement of the lymphatics in the skin. Cross-section of a nodule shows it to be made up of small cavities filled with a clear fluid. Treatment is of no avail.

ANGIOMA.

Angioma, or nævus vascularis, is a congenital growth, consisting in the development of new and enlarged blood-vessels, situated in the skin or subcutaneous tissue. Two distinct forms are encountered, which depend upon the kind of blood-vessels involved. When the capillaries alone are dilated, usually a single patch exists; but there may be several patches, varying in size from a pin-head to a bean, or as large as the palm. They are on a level with, or slightly raised above, the surface of the skin; of a bright- or dark- red or purplish color,

round or irregular in shape, and soft to the touch. On pressure, the color fades away and quickly returns. The usual situations of these growths are about the head, especially the face and lips, the neck, and the arms. They may be quite small at first, and enlarge slowly, until, having attained a certain size, they cease to grow, and remain stationary throughout life. At times they disappear more or less completely, leaving pale atrophic scars behind. The port-wine mark is a form of capillary nævus.

The other kind of vascular tumor depends upon the formation of enlarged veins, which begin in the subcutaneous tissue and subsequently may involve the skin. They occur, for the most part, about the lower region of the body, the back, and limbs, and consist of smooth or lobulated, prominent, erectile, sometimes pulsating growths, varying in size from a pea to a walnut and larger. They are soft and compressible. Nothing is known as to the cause of these formations. They should be distinguished without difficulty.

Treatment.—When the nævi are small and not in conspicuous places, they may be left alone. Occurring about the cheeks, they give rise to much annoyance. Their removal may be effected, when small and of the capillary variety, in various ways. Vaccination is sometimes followed by good results, a white scar taking the place of the enlarged vessels. Painting the patch with collodion or liquor plumbi subacetatis daily, for several weeks, will cause constriction of the capillaries. Caustic applications, such as strong nitric acid or caustic potash, 1 to 4 drachms to the ounce of water, applied once or twice, may be of benefit. Multiple scarifications, the incisions being made parallel, close together, and cross-hatched, the object being to destroy the vessels, as well

as multiple puncture by many closely-placed needles, are recommended, but the results are not satisfactory. The best method at our disposal consists in the application of electrolysis, such as is employed for the removal of superfluous hairs. To the negative pole of the galvanic battery the electrolytic needle is attached, and is inserted into the growth, while to the positive pole is attached a sponge-electrode, and this is applied to any portion of the body. From ten to fifteen cells are employed. The needle is retained for a few seconds. Even in large port-wine marks benefit is derived from such a procedure.

In the more prominent nævi the growth may be strangulated by the ligature. The galvano-cautery is also used to destroy the blood-vessels.

TELANGIECTASIS.

This consists in the enlargement of pre-existing blood-vessels and in the formation of new vessels. The disease is usually of spontaneous origin, and occurs during middle life. It shows itself upon the skin in the form of round or oval, pin-head to pea- sized, bright- or dark- red, or violaceous, level, or raised patches, or as tortuous lines. There is usually a central bright-red, smooth spot, with fine, spreading capillaries, radiating in all directions. They occur in numbers here and there over the surface, but for the most part about the face and chest. They never attain to any great size, but pursue a chronic course, enlarging slowly. Sometimes they disappear spontaneously.

Rosacea is a form of telangiectasis which is met with about the face and nose,—as a more or less diffused, dull redness, or as a localized patch, with dilated, tortuous veins. It occurs associated with acne and sebor-

rhœa, in those exposed to the inclement weather—as cabmen and sailors—and in those addicted to the use of alcohol.

The *treatment* consists in the destruction of the blood-vessels by electrolysis.

NEUROSES.

(By J. Williams Lord, A.B., M.D.)

In this group are classed various functional disturbances of the skin, consisting of disorders of sensibility, and comprising hyperæsthesia, anæsthesia, dermatalgia, and pruritus.

HYPERÆSTHESIA.

This is a condition of increased sensibility of the skin. It may be idiopathic or symptomatic. It is usually secondary to some functional or organic disease of the nervous system. It may be localized or diffused, limited to one-half of the body, or extend over the entire surface. In many cases it is an expression of hysteria.

ANÆSTHESIA.

Anæsthesia implies a diminished or complete absence of sensibility. This may be local or general, idiopathic or symptomatic; the result of external causes or of internal conditions. Locally, it may be due to the application of cold and freezing mixtures, carbolic acid, cocaine, the essential oils, or to injury to nerves. It is secondary to deposits in the nerves, as in leprosy and syphilis. It occurs in hysteria and organic disease of the brain and cord; also from the administration of ether and chloroform.

DERMATALGIA.

Dermatalgia, or neuralgia of the skin, is an extremely painful condition, limited to a small area, and usually involving the hairy region. It is more frequent in women. There is no structural change in the affected

part. The pain is intermittent, spontaneous, superficial, of a burning, darting, boring character, increased by pressure, and is worse at night. It may be the result of rheumatism, anæmia, and chlorosis, or of functional or organic disease of the nervous system, as hysteria and locomotor ataxia.

The *treatment* depends upon the cause. Relief may be obtained from blisters, the galvanic current, and, in cases of rheumatism, the salicylate of soda.

PRURITUS.

This is a functional disorder of the skin, not dependent upon any structural change, and is characterized by itching. It may be general or local. The itching varies in its intensity, is of a paroxysmal nature, and is worse at night, the patient being unable to resist the desire to scratch. In some cases, secondary changes, such as excoriations, papules, thickening of the skin, and pigmentation, arise, as the result of the scratching. In other cases there is no change in the skin, and only the patient's statement is to be relied upon.

The regions involved are usually the perineum, anus, scrotum, and vulva; but the face and scalp and other portions of the body may be implicated. It is commonly encountered during middle life and in old age, but occurs sometimes in childhood. In many cases the cause of the affection is unknown. Varied conditions may call it forth,—gastric and intestinal disorders, hæmorrhoids, jaundice, diabetes, pregnancy, leucorrhœal discharges, and seat-worms.

Pruritus affects certain individuals during the winter only. Old age, with its accompanying atrophic change of the skin, is frequently attended by intense general itching.

Treatment.—Remove all local sources of irritation and treat the general condition, which gives rise to pruritus. Constipation should be relieved by salines and mineral waters. The fluid extract of jaborandi, in fifteen-minim doses, and the tincture of cannabis Indica, in like doses, three times a day, occasionally give relief. Locally, lotions (Formulæ 63, 64), ointments (Formulæ 65, 66, 68), or baths containing bran or soda may be used.

When the pruritus depends upon a leucorrhœal discharge, astringent injections of alum, tannic acid, zinc sulphate, and the like should be employed.

PARASITIC SKIN DISEASES.

(By J. Williams Lord, A.B., M.D.)

The parasitic skin diseases are divided into two classes,—those due to vegetable and those due to animal parasites.

I. Vegetable Parasitic Skin Diseases.

The commonly recognized vegetable parasitic skin diseases are favus, ringworm, and parasitic chloasma. They are generally grouped together under the generic term *tinea*, first applied to them by the late Dr. Tilbury Fox, and the individual diseases are technically known as tinea favosa (favus), tinea trichophytina (ringworm), and tinea versicolor (chloasma, or pityriasis versicolor).

The organisms producing these diseases belong to the class Fungi, and are easily recognizable under a comparatively low power of the microscope (three hundred to five hundred diameters).

Most pathologists, following the authority of the leading botanists in this field, regard the different organisms as separate species, although some dermatologists and pathologists believe that the parasitic fungi found in skin diseases are merely stages of development of one or other of the common mold fungi so widely distributed in nature.

This conclusion has, however, not been generally accepted, although receiving support from an observation of Hebra, who produced a mixed eruption resembling ringworm and favus by the prolonged application of moist, moldy compresses to the skin.

TINEA FAVOSA.

Favus is a contagious vegetable parasitic disease, which appears for the most part about the scalp, but may occur upon any portion of the body. It begins as a slightly-reddened spot, soon becoming scaly. A pin-head-sized, yellow crust then forms about the opening of a hair-follicle, and increases to the size of a pea. It is distinctly raised above the surface of the scalp, dry, sulphur-yellow and umbilicated, usually penetrated by one or more hairs. When the crust is removed the under surface is seen to be convex, causing a corresponding depression in the scalp, which is reddened and moistened by a sticky, serous fluid or pus. These crusts appear in one or more places, or may involve the entire scalp and become confluent. The hair is dry, lustreless, and soon drops out, leaving pale, atrophic, bald patches. There is a peculiar, musty, mousy odor about the scalp. Favus crusts may appear upon the arms, legs, and the nails. Favus begins in childhood, and may last throughout life. It is exceedingly chronic and rebellious to treatment. It is a rare disease in this country, most of the cases being brought here from Europe. It is favored by filth and lack of cleanliness. It is due to the invasion of the epidermis, hair, and hair-follicles, by the spores and mycelium of the fungus, the achorion Schoenleinii.

Diagnosis is not difficult. When there is pus about the base of the crusts it may resemble a pustular eczema. In eczema the hair does not fall out. The crusts reveal, under the microscope, the peculiar fungus.

Treatment.—Remove the crusts by soaking the scalp with sweet-oil, pull out the diseased hairs, and finally rub in a parasiticide, such as sulphur ointment, oil of cade, ointment of ammoniated mercury or carbolic acid, and sulphurous acid. The latter may be ap-

plied to the diseased spots in full strength. The disease is usually very resistant.

TINEA TRICHOPHYTINA.

Tinea trichophytina, or ringworm, is a contagious, vegetable, parasitic disease, due to the trichophyton fungus. It appears upon the scalp, the bearded region, and the general body surface. It receives various names according to the regions invaded, on account of the different clinical features. Upon the trunk it is known as tinea circinata; upon the scalp, tinea tonsurans; upon the bearded portion of the face, tinea sycosis.

Tinea circinata begins by one or more slightly-reddened spots about the face, neck, or chest, which enlarge with the formation of papules or vesicles along the periphery, while the centre of the patch clears up and becomes covered with grayish scales. The patch thus assumes a ring shape. Individual patches reach the size of a quarter to half a dollar; many coalesce, irregular shapes arising. There are usually many patches, which may spread over the whole body. Itching is slight. The disease is met with at all ages, though more commonly in childhood.

Tinea circinata occurring about the axilla or in the fork of the thighs is somewhat modified. It presents more inflammatory symptoms and resembles an eczema. It is described as an eczema marginatum. The growth of the fungus is favored here by the heat and moisture. The skin is reddened, markedly itchy, and more or less oozing is present. The whole of the upper portion of the thighs is involved. The margins of the patches are distinctly raised, sharply defined, and several smaller spots are seen along the borders.

Tinea tonsurans begins as an ordinary patch of ringworm, a small, red, scaly, round spot, which enlarges slowly. The hair soon becomes dry, lustreless and brittle, and breaks off close to the scalp, giving the patch a stubbly appearance. One or more patches may be present. It occurs only in childhood. When the suppuration extends deeply into the scalp and a boggy elevation is produced, it is known as *kerion*.

Tinea sycosis may involve a limited area or more or less of the entire bearded region. It rarely attacks the upper lip. It is conveyed by the razor from one person to another, and is commonly known as the barber's itch. It begins as a small, red spot, but soon the hair and hair-follicles are invaded by the fungus, giving rise to inflammation of the subcutaneous tissue, and a hard, nodular, lumpy formation results; pustules develop about the hairs, and a glairy, muco-purulent discharge takes place, which dries into crusts. It is a disease of adult life and of the male sex.

All varieties of ringworm are contagious.

Diagnosis.—Ringworm of the body is to be differentiated from psoriasis, the annular syphilide, and seborrhœa.

In psoriasis the patches are of a brighter red, and the scales much more abundant and glistening. The patches are symmetrical.

In the annular syphilide the margins are indurated, of a coppery color. Other symptoms of syphilis are usually present.

In seborrhœa the patches are small, the edges fade away gradually, and the scales are greasy.

Ringworm of the scalp resembles, at times, an alopecia areata and a scaly eczema.

In alopecia areata the bald patches are smooth. In

ringworm the patch is covered with scales and stubbly hair.

In scaly eczema the scalp is reddened, infiltrated, the hair is not diseased, and there is a history of moisture at one time in the course of the disease.

Ringworm of the beard must not be mistaken for a pustular eczema or simple sycosis.

Eczema pustulosum occurs usually in childhood. The pustules are grouped, small, and not limited to the hair-follicles; the skin beneath is red and moist; no nodules.

Sycosis non-parasitica consists of small, pin head pustules about the hair. It is met with most frequently along the upper lip. There is no nodular formation.

Treatment.—Tinea circinata readily responds to treatment. Tinea sycosis, tinea tonsurans, and kerion are more difficult to overcome. In all forms, the parts should be washed with sapo viridis. In tinea sycosis and tinea tonsurans this should be followed by epilation, and then the use of a parasiticide. Bichloride of mercury, 2 grains to the ounce [1 to 250] of water or alcohol; white-precipitate ointment, $\frac{1}{2}$ to 1 drachm to the ounce [1–16 to 1–8]; oleate of mercury, 5- to 15-per-cent. strength; sulphur ointment; oil of cade, 1 to 2 drachms to the ounce [1–8 to 1–4], may all be used with success.

Care must be taken to avoid producing too much irritation by the remedies employed.

TINEA VERSICOLOR.

Tinea versicolor is a vegetable parasitic disease, due to the microsporon furfur. It begins by pin-head to pea- sized, yellowish spots, scattered over the surface.

These gradually enlarge, coalesce, and form irregularly shaped patches of a light- or dark- yellow or even black color. The edges of the patches are sharply defined, and the surface is somewhat scaly. Itching may be present, but it is often absent. In delicate skins and in those who perspire freely the patches are hyperæmic.

The regions invaded are the front of the chest, neck, back, abdomen, arms, and flexor surfaces of the elbows; the face, hands, and feet escape. It is but slightly contagious. It occurs only in adults and in those who perspire freely, and is frequently seen in phthisical subjects. It is essentially chronic in its course, and may last for years.

The fungus grows in the upper layers of the epidermis, and consists of a mycelium and spores. It can be readily detected by the aid of the microscope. Remove a little of the scale, and moisten with caustic potash; examine under a power of 500 diameters. The spores appear in groups.

The *diagnosis* can be easily made by paying attention to the region involved, the color, and the scales. If in doubt, examine by the microscope. It must not be mistaken for the macular syphilide. In syphilis, in addition to the eruption, there are other symptoms of the disease. The eruption comes out suddenly, and appears not only on the trunk, but the face, arms, and legs.

Chloasma is a pigmentary affection, and occurs in patches upon the face and hands, and not upon the body. There are no scales, but merely an increase in the amount of pigment.

Treatment.—Simple, mild parasiticides, such as the sulphite or hyposulphite of sodium, in lotion or ointment, a drachm to the ounce [1 to 8]. Sulphurous acid,

pure or diluted, will usually be effectual. The remedy must be continued for some time after all manifestations of the disease have disappeared; otherwise, some of the spores of the fungus, preserved between the epithelial scales, may take on renewed growth and develop into the mature parasite again.

II. Animal Parasitic Skin Diseases.

The skin diseases due to animal parasites are scabies and pediculosis.

SCABIES.

The invasion of the skin by an animal parasite—the sarcoptes scabiei—gives rise to certain inflammatory symptoms, and to a distinct lesion—a burrow—which is characteristic. The female acarus, after impregnation, penetrates the epidermis, boring its way down to the mucous layer, depositing its eggs as it advances. These vary from a dozen to fifty in number. In the course of a week or fortnight the eggs hatch out.

The burrow, or cuniculus, consists of a slight elevation of the epidermis, from a quarter to half an inch in length, straight, tortuous or zigzag, colorless or marked by black dots. The parasite selects the thinnest portions of the skin. The lesions appear first about the web of the fingers, the flexor surfaces of the wrists, then the axillæ, under the mammæ, around the umbilicus, upon the penis, and the front of the thighs. The face and neck escape, except in babies. Itching is intense, especially at night; and the patient, in order to obtain relief, tears the skin by his scratching, and secondary symptoms are produced. These consist of torn papules and vesicles, blood-crusts, excoriations, pustules, and even blebs, and a more or less inflammatory swelling.

In those predisposed to eczema such a condition frequently becomes a complication.

Scabies pursues a steadily progressive course, and lasts indefinitely, unless the cause is removed. It is more frequent in European countries than in America. Here it forms about 2 per cent. of skin diseases.

Diagnosis.—Scabies is to be differentiated from an eczema and from pediculosis. The presence of the cuniculus is diagnostic. It should be looked for between the fingers. Upon other parts of the body it is soon lost,—from the scratching. The regions invaded are characteristic. The history of contagion is also of aid. In eczema the vesicles and pustules tend to group, and are not scattered in an irregular manner as in scabies; nor are the same regions invaded. In pediculosis the lesions are confined to those parts of the body covered by the clothing.

Treatment.—The patient should first be given a warm bath, with plenty of soap, and thoroughly scrubbed; afterward, a parasiticide is to be rubbed in. Sulphur, 1 to 2 drachms to the ounce of ointment [1–8 to 1–4]; balsam of Peru,—painted on with a stiff brush. The applications should be made twice a day for three days, followed by a bath. If, in the course of a few days, the itching continues, repeat the treatment. Scabies, as seen in this country, usually responds readily to the applications mentioned.

PEDICULOSIS.

There are three kinds of lice which infest the human body,—the pediculus capitis, or head-louse; the pediculus corporis, or body-louse, and the pediculus pubis, or crab-louse.

The body-louse lives in the clothes, and goes to the

body only to obtain nourishment; the other varieties live upon the body. By means of a sucking apparatus, which they insert within a hair-follicle, they obtain the blood, which serves as a food. This act gives rise to a hæmorrhagic spot, with a slightly-reddened areola about it. Other lesions are always present, but these are due to the scratching, and consist of scratch-marks, wheals, pustules, thickening of the skin, and pigmentation.

Pediculosis Capitis, due to the pediculus capitis, is to be found upon the scalp, usually over the occipital region, mostly in children. The little insects can be seen running over the hairs. They deposit their eggs or nits along the hair. The nits are small, pear-shaped, grayish in color. More or less eczema is invariably present, the scalp in patches being reddened and covered with pustules; the hair becomes matted, crusts form; the glands at the back of the neck enlarge, sometimes suppurate, and abscesses develop.

Treatment.—The scalp should be rubbed with crude petroleum twice a day, for two or three days; this destroys both the lice and the nits. Tincture of cocculus Indicus also gives good results.

Pediculosis Corporis is due to the body-louse. The characteristic lesion consists of a minute hæmorrhagic spot; other symptoms are always present, the result of scratching. Body-lice are found upon old and unclean persons. The lice live in the clothes, and deposit their eggs in the seams. The lesions occur mostly about the neck and shoulders.

Treatment.—The clothes should be thoroughly baked. The patient is to receive a bath; afterward, a sulphur ointment or petroleum is to be rubbed into the skin.

Pediculosis Pubis is due to the pediculus pubis. There is itching, and inflammatory lesions are also present. The lice firmly adhere to the hair near the root. They are found about the pubis, sometimes in the axillæ, and occasionally about the eyelashes.

Treatment.—A few applications of mercurial ointment are sufficient.

THE CUTANEOUS MANIFESTATIONS OF SYPHILIS.

General Considerations.

Syphilis is a chronic infectious disease of the system, which, in the course of its evolution and development, produces characteristic symptoms and lesions in various organs and tissues of the body. The following pages will be devoted to the consideration of one class of these morbid changes, namely, those involving the general integument and its appendages.

The cutaneous manifestations of syphilis were recognized by the earliest writers upon venereal diseases. Thus, Leonicenus (1497), Gaspard Torella (1498), Peter Pintor (1500), Grünpeck (1503), John de Vigo (1514), and others describe the eruptions with more or less accuracy. On account of their prominence, these lesions have always commanded a large share of the attention of syphilographers, as well as of the general profession and the laity.

The syphilitic skin diseases may be properly regarded as the first evidences of the constitutional effects of the venereal infection. The chancre and enlarged lymphatic glands are more or less local manifestations of the virus due to direct irritation. When, however, the period of general eruption, with its accompanying fever, has declared itself, the poison has reached the blood, which fluid then becomes itself infective, and may communicate the disease if inoculated.

GENERAL MORPHOLOGY AND CLASSIFICATION OF SYPHILITIC SKIN DISEASES.

The general features of the cutaneous lesions due to syphilis resemble more or less closely those of the ordinary skin diseases. For this reason most of the older and, indeed, many modern writers on syphilis adopt the ordinary dermatological nomenclature to describe syphilitic skin diseases, using the adjective "syphilitic" as a differential designation. Hence, one meets frequently, in medical writings, such compound names as "syphilitic roseola," "syphilitic acne," "syphilitic lupus," "syphilitic pemphigus," and even "syphilitic eczema." If it is borne in mind that acne, lupus, pemphigus, and eczema on the one hand, and syphilis on the other, are perfectly distinct morbid processes, having nothing in common, and that the name syphilitic lupus is not intended to convey the impression of a mixed disease, partly syphilis and partly lupus, or even a lupus occurring in a syphilitic subject, but that it means simply a lupus-like syphilitic lesion, it is plain that such a terminology leaves much to be desired on the score of clearness and simplicity. The first departure from this unphilosophical and confusing nomenclature was made by Biett[1] (1829), who classified the syphilitic skin diseases according to their elementary lesion. The classification of Biett, modified in some unimportant particulars, is the one adopted by most syphilographers at the present day.

Alibert (1838)[2] introduced the collective term "syphilide" to characterize the cutaneous manifestations of the venereal disease. Inasmuch as all syphilitic

[1] Practical Synopsis of Cutaneous Diseases. Cazenave and Schedel. Philadelphia, 1829, p. 337.

[2] Nosologie Naturelle. Paris, 1838.

eruptions are primarily dependent upon the presence of the syphilitic virus in the blood or tissues, no objection can be urged against using this term as a substantive term and defining the different lesions by adding the proper adjective.

Syphilis of the skin manifests itself under the elementary forms of hyperæmic discolorations, papules, pustules, tubercles, and nodules; and as secondary or consecutive lesions, namely, ulcers and pigmentations. A simple classification of the syphilides would, therefore, be as follows:—

1. The erythematous syphilide.
2. The papular syphilide.
3. The pustular syphilide.
4. The tubercular syphilide.
5. The nodular syphilide.

As consecutive lesions or processes may be added—

1. The ulcerating syphilide.
2. The pigmentary syphilide.

GENERAL DIAGNOSTIC FEATURES OF THE SYPHILIDES.

The diagnosis of syphilitic eruptions should offer little difficulty, if the definitions of the elementary lesions are clearly appreciated and borne in mind. There are, however, some general characters of the syphilides a knowledge of which may render their recognition still more easy. Among the more important of these characters are the following:—

CHRONOLOGICAL SEQUENCE AND COURSE OF ERUPTIONS.

Clinical observation has taught that the syphilides follow each other in a certain consecutive order. Thus, those lesions affecting principally the superficial layers of the skin occur early, while those extending more

deeply follow later. For example, the first manifestation of constitutional infection is usually the erythematous syphilide, which may be succeeded in turn by the papular, pustular, tubercular, and nodular or gummatous forms. Ricord was the first who divided syphilides into two classes,—the early (*syphilides præcoces*) and the late (*syphilides tardives*). The first class, consisting of erythematous, papular, and pustular, belonged to the secondary period, while the other consisted of manifestations of the tertiary stage. This eminent syphilographer further laid it down as a law that the period of eruption of the syphilides is never reversed. Thus, an erythematous syphilide never follows a papular eruption, although the erythematous form may at times not appear, or perhaps be overlooked. This rule appears to have no exceptions for any individual attack of syphilis, but Zeissl[1] has pointed out that, in case of re-infection, the evolutionary cycle of the disease may be repeated, and one individual may, in his life-time, have an erythematous following a papular syphilide, but this could not occur during the same attack of syphilis.

The careful study given to all features of the disease has shown that the division of the syphilitic eruptions into early and late, as made by Ricord, is only tenable in a general sense. Cases not infrequently occur in which some of the later manifestations (tubercles and gummata) are developed almost contemporaneously with the earlier eruptions,—such as papules and pustules.

Reckoning from the period of primary infection or inoculation, the first development of the cutaneous lesions may be fixed at from nine to twelve weeks. The different eruptions succeed each other in crops, with periods of rest between the successive eruptions,

[1] Lehrbuch der Syphilis, Bd. ii, 3te Aufl., 1875, p. 103.

until what is usually known as the secondary period has been brought to a close. This generally coincides with the disappearance of the pustular syphilide. After an interval of very variable duration, during which no manifestations of the disease may be present, the tertiary stage, so called, characterized by the eruption of the neoplastic syphilides, namely, tubercles, gummata, and their consequences, begins. Neither the duration of the secondary stage, the interval of latency, nor the tertiary stage can be given with any approach to correctness. The secondary stage is, however, brought to a conclusion, usually, within a year from the first appearance of the erythematous exanthem, especially if the patient has been subjected to appropriate treatment. The interval between the secondary and tertiary periods is usually several years, although the latent period may be entirely skipped, the secondary stage passing directly into the tertiary.

In the secondary stage, or period of the precocious syphilides, the eruption is usually symmetrical and the lesions profuse, the blood, pus, and possibly some of the normal secretions, infectious and inoculable. In the late, or gummatous stage, on the other hand, the lesions are few, not symmetrically distributed, and the blood and secretions have lost their infectivity. In fact, according to some observers, the disease—syphilis—has disappeared, and the morbid manifestations are merely relics of a preceding pathological process.

LOCALIZATION AND DISTRIBUTION OF THE SYPHILIDES.

As just stated, the earlier syphilides are symmetrical, and with lesions profusely distributed. The prevailing localities for the eruptions are the trunk, the proximal portions of the extremities, the scalp, the border of the

capillary growth on the forehead and nape of the neck, and certain portions of the face, especially the angles of the mouth and alæ of the nose. The flexor surfaces are more prone to the eruption than the extensor; and the palms of the hands and soles of the feet, which are usually spared in non-syphilitic affections of the skin, are especially liable to syphilitic eruptions,—more particularly, the papular and squamous varieties. In localities where two surfaces of the skin are much in contact —as between the buttocks, the perineum, the axillæ, between the chest and pendulous breast in women—the papular syphilide, especially that form known as the moist papule or condyloma latum, has its site of predilection. Pustular syphilides are most frequently found affecting the hairy regions of the body, while the site of predilection of some of the later forms, such as subcutaneous gummata, is found in the thighs, and especially the upper half of the leg.

COLOR OF SYPHILITIC ERUPTIONS.

In the text-books and standard works upon syphilis much stress is laid upon the color of syphilitic eruptions. But the simple statement ordinarily made that the syphilides have a "raw-ham" color, or "copper" color is not sufficiently descriptive, for cases frequently occur to which neither of these characterizations apply. While the syphilitic coloration is nearly always some shade of brown, the depth of tint varies considerably with the age of the lesion of which it is a part. Fournier speaks of "a sombre-red tint, a brown red, exactly identical with the hue of a slice of lean ham," and of "a tint not so dark, of red mingled with yellow, very happily compared by Swediaur to the color of copper."[1] Fournier states that the

[1] Leçons sur la Syphilis. Paris, 1873.

color recalls to the eye "the tint of the old kitchen utensils, *well polished, carefully kept.*" But other authors, among whom are Zeissl[1] and Grünfeld,[2] compared it, also after Swediaur, to *tarnished* copper. Swediaur himself, however, speaks of "spots of a reddish purple, yellowish, or livid color," and of "brown or copper-colored spots," and again of "dark, copper-colored spots,"[3] thus leaving it, in a measure, uncertain whether he meant polished or tarnished copper.

Any one who makes a personal study of his cases will soon come to the conclusion that neither raw ham nor copper is a good standard for comparison with the color of syphilitic eruptions. The lesions may vary from a dull yellowish to dark brown, but one soon learns to recognize a peculiar quality in the tint which is quite characteristic, but not easily described, and which seems also to have eluded the artists who have made portraits of cases.

The color of a syphilitic lesion of the skin is not due simply to local hyperæmia, since it does not entirely disappear under pressure. There is, in addition to the inflammatory redness, an extravasation of blood-pigment to which the darker shade of coloration is due. Kaposi[4] intimates that the specific diathesis may have some part in the production of discoloration. Cornil[5] says that "this coloration is owing particularly to extravasations of red blood-corpuscles; as the spots are disappearing they become yellow, greenish-yellow, gray, following the tints of blood-pigment in a superficial ecchymosis."

[1] *Op. cit.*, p. 96.

[2] Eulenberg's Realencyclopädie, Bd. xiii, p. 304.

[3] Complete Treatise on Syphilis. Translated from the fourth French edition. Philadelphia, 1815.

[4] Syphilis. Stuttgart, 1881, p. 129.

[5] Syphilis. Philadelphia, 1882, p. 129.

But this is not peculiar to syphilides, as in various non-specific cutaneous affections similar pigmentary changes may occur. However, when all is said, one may often derive some assistance in diagnosis by carefully observing the color of the eruption and comparing this symptom with others. The physician who relies upon the color of the lesion alone, to the exclusion of other symptoms, will frequently make mistakes.

MULTIFORMITY OF LESIONS.

Although it has been before stated that the syphilides are characterized by a more or less uniform sequence of eruption, it is frequently the case that more than one form of lesion is present at the same time. Thus erythematous, papular, pustular, and tubercular lesions may all co-exist, or the eruption may consist of one variety of lesion, but in different stages of development. This is due to the chronic course of the syphilides, and, although some cases of eczema present a similar multiformity of lesions, the clinical history of the two diseases is so different that they are not liable to be confounded with one another.

CONFIGURATION OF THE ERUPTION.

Most of the syphilides tend to assume an annular or crescentic arrangement. A group of papules, pustules, or tubercles is usually found to form either a complete circle, crescent, or curved line. This is especially well shown on the forehead, the nape of the neck, or the lower part of the face. In large flat tubercles the absorption begins in the centre of the lesion, and after involution has progressed somewhat a circular ridge remains, which gradually disappears by an extension of the absorption from within.

But this configuration is as little specific as the other peculiarities already mentioned. Ringworm, some cases of lupus, and annular erythema show the same arrangement of lesions. Hence, too much reliance must not be placed upon these symptoms when taken singly.

SUBJECTIVE SYMPTOMS.

Itching, pain, or burning are nearly always absent during the development of the earlier forms of syphilitic eruptions. In this absence of subjective symptoms a valuable aid to diagnosis is given to the physician. It must not be forgotten, however, that some non-specific eruptions which present a marked similarity to certain syphilides are frequently devoid of subjective symptoms. On the other hand, syphilides sometimes itch, especially in persons with a delicate and irritable skin, and some gummata are exquisitely painful.

RACIAL PECULIARITIES.

Livingstone has stated that the negroes of the interior of Africa are exempt from the ravages of syphilis even after abundant opportunities for infection. Although it is frequent among the natives inhabiting the west coast, he says, "It seems incapable of permanence in any form, in persons of pure African blood, anywhere in the centre of the country. In persons of mixed blood it is otherwise; and the virulence of the secondary symptoms seemed to be, in all cases that came into my care, in exact proportion to the greater or less amount of European blood in the patient."[1] In the United States, opportunities for observation upon persons of unmixed negro blood are becoming rarer every year; but physicians of much experience in the

[1] Travels. London, 1857.

South will, doubtless, agree that the colored race suffers much more severely from syphilis than the white.

In colored individuals, syphilis of the skin presents certain peculiarities which call for notice in this place. Few observations bearing upon this point are on record. The most thorough study of the effects of syphilis in the negro is contained in a paper by Dr. I. E. Atkinson, of Baltimore.[1] From an analysis of one hundred cases of the disease in the colored race, it appears that the predominant character impressed upon syphilis in the negro is a pronounced tendency to suppuration. The primary lesion is more destructive, the adenopathy is more extensive, and the glands, in a very much larger proportion of cases than in whites, break down and suppurate, and all eruptions except the erythematous showed a marked proclivity to become pustular. Erythema is difficult of recognition in the darker patients. The small papular syphilide is liable to be mistaken for keratosis pilaris. Attention has also been directed to this possible error by Duhring. The summits of the papules, when not pustular, often have a whitish coloration, partly due to an accumulation of fine scales, and partly to a more rapid exfoliation of epithelium. The pustular syphilide not infrequently presents a close resemblance to cases of small-pox, as in two cases who presented themselves in my clinic not very long ago.

It is hardly necessary to call attention to the fact that the "raw-ham" or "copper" color is of no value as a diagnostic sign in syphilitic eruptions occurring in the colored race.

RECAPITULATION.

The syphilides are the first manifestations of general systemic infection.

[1] Early Syphilis in the Negro. Md. Med. Journal, vol. i, 1877, p. 135 *et seq.*

Syphilitic eruptions are either erythematous, papular, pustular, tubercular, or nodular, or some mixed forms, modifications, or consequences of these elementary lesions.

The syphilides follow a regular sequence in their eruption. The pustular or tubercular forms never precede the erythematous. The earlier forms are usually superficial, while those coming later involve the skin more deeply.

The average period of incubation of the primary lesion is three weeks; from the appearance of this lesion to the outbreak of the first syphilides, six to ten weeks; and the tertiary manifestations are rarely encountered until after a year from the date of infection.

During the secondary period the blood and pathological secretions are infective. After the development of the tertiary or gummatous stage the infectivity of the blood and tissues has disappeared.

The early syphilides are symmetrical, and often profusely distributed. The later forms occur singly, and show no tendency to symmetrical arrangement. The flexor surfaces are more liable to be the site of lesions.

The color of the syphilides is usually a reddish or yellowish brown, described by authors as the "raw-ham" or "copper" color. This color does not disappear on pressure, being partly due to extravasation of blood-pigment into the tissues.

The lesions are usually multiform, a pure example of papular, pustular, or tubercular syphilide being seldom seen. Syphilides are frequently aggregated in circular or crescentic groups. This is, however, not a characteristic symptom. Subjective symptoms, as itching, burning, and pain, are usually absent in syphilitic eruption.

In the negro race as met with in this country, syphilis shows a pronounced proclivity to the development of suppurative lesions and glandular enlargements. In this race the color of the eruption is of no aid in diagnosis.

In order to make an exact diagnosis of a syphilitic eruption, the physician must have some knowledge of dermatology, be a good observer, and be able to group important symptoms in their proper relations and bring them into connection with the whole clinical history, objective and subjective, present and past, of the case under examination.

The Erythematous Syphilide.

[*Synonyms.*—Roseola syphilitica, macula syphilitica, erythema syphilitica, syphilis cutanea maculosa, pustule ortiée ou formiculaire, macular syphilide.]

The erythematous syphilide is usually the first manifestation of systemic infection by the syphilitic virus. Its significance as a symptom of syphilis was recognized by the earliest writers upon the disease. Mention is first made of it by Torella (1497), followed by Mattioli (1535), Ferrier (1553), and Fernel[1] about the same time. During the seventeenth or eighteenth centuries little attention was paid to this manifestation of syphilis, and it was not until Rayer's masterly description (1827) that modern syphilographers appreciated the importance of this symptom in the clinical history of the disease.

[1] Fernel (1554) gives this exact description of the erythematous syphilide: "Altera species paullo deterior est qua cutis universa crebris maculis minime extuberantibus conspergitur usque parvis, lentigines instar, ac modo rubris, modo flavis, quæ non ante deleri extinguive possunt, quam morbi radix sit evulsa . . . quam nulla graviora sequuntur *incommoda*."

The eruption appears in the form of roundish, oval, or irregular spots, of a pinkish, livid, or brownish-red color. They vary in size from one-half to two centimetres (one-fourth to one inch) in diameter. At times they begin as red points, which rapidly enlarge until they have attained the size mentioned. Usually the spots are not elevated above the level of the surrounding skin, although in some cases the affected skin is slightly tumid, while in others the centre of the spot is occupied by a small papule. The margins of the lesions are pretty clearly outlined. Under pressure of the finger the color may entirely disappear at first, but after the eruption has been out some time more or less pigmentation remains when the finger is passed over the spots. The color is more or less uniform, but usually a shade darker at the centre. The patches are not scaly. Contrary to the ordinary erythemata, which become more marked when the temperature of the body is elevated, in the erythematous syphilide cooling the surface brings out the eruption more prominently.

The lesions are most freely distributed on the lateral surfaces of the trunk, the back, abdomen, and the flexor surfaces of the extremities. The face is usually exempt. The skin over the sternum is, likewise, rarely the site of the erythematous syphilide. The penis and scrotum in the male, or the pudendal region in the female, are also exempt, except in cases to be presently referred to. The hairy margin of the scalp, palms of the hands, and soles of the feet are frequently attacked, but the dorsal surfaces of the hands and feet are nearly always free from the eruption. In negroes the erythematous syphilide can rarely be recognized.

The eruption is usually abundantly distributed, being sometimes scattered over the entire surface. When the

lesions are few in number, they are almost altogether localized on the sides of the trunk and back. The crescentic or annular form is sometimes assumed on the forehead.

The development of the eruption is usually slow, coming out in the course of one to two weeks. At times, however, the eruption is acute, the entire surface becoming covered in twenty-four to forty-eight hours. This is only liable to occur in persons of run-down constitutions. The case may be looked upon as an indication of a severe attack of syphilis. In some cases the eruption occurs in successive crops, one crop fading as another appears.

When the eruption reaches its height, it may maintain its color and extent of distribution for a week or ten days, and then begin to fade, the color passing through the varying shades of brownish-red to livid- or grayish-red, and finally disappear, leaving a slight yellowish-brown or grayish pigmentation, which often remains for a long time. The duration of the stage of involution varies from a few days to weeks and months. The longer the eruption remains, the deeper will be the remaining pigmentation. Where it lasts only a short time, there often remains no evidence of its previous existence. This, doubtless, accounts for many cases in which the eruption is not noticed.

During acute febrile diseases, such as pneumonia, typhoid fever, etc., the eruption may disappear, to recur when the fever is at an end.

The individual lesions always remain distinct, never becoming confluent, as in some non-specific erythemata.

Fournier[1] describes a variety of the erythematous syphilide under the name of *roseola urticata*. It is the

[1] *Loc. cit.*

same as that named *pustule ortiée* by Alibert. This lesion resembles, in all respects, the simple erythematous syphilide, except that it is very slightly elevated above the surface of the surrounding skin. I have already referred to it above, and do not regard it of sufficient importance to demand description as a separate variety.

In subjects who have undergone treatment for syphilis, the erythematous syphilide sometimes recurs months after the disappearance of the first eruption. Fournier states that the date of recurrence may be postponed two or three years. It appears in very sparsely disseminated red or pink, flat or very slightly raised annular spots or patches. These may acquire a size of two to five centimetres (one-half to two inches) in diameter. They are especially liable to occur about the forehead, the abdomen, the lower part of the chest, and the glans penis. This form relapses with great readiness, and is sometimes exceedingly resistant to treatment.

The skin of the genitals is rarely the seat of the erythematous syphilide, as already stated, but the glans and internal preputial surface, or the vulva, may be attacked, especially by the recurrent form. If there is vulvitis, balanitis, or a profuse seborrhœa of the glans present, the secretion rapidly decomposes and causes circumscribed erosions, which correspond to the erythematous spots. These erosions not rarely look like superficial chancres, and may give rise to false diagnoses. Practically, however, the result, so far as the danger of infection is concerned, is the same, as the secretion from these erosions is infectious, and may convey syphilis during venereal intercourse.

The erythematous syphilide may disappear completely, after a varying duration, leaving a normal-colored skin, or pigmented spots, to mark the eruption.

In some cases, the papular and pustular manifestations may make their appearance before the erythematous spots have disappeared.

CONCURRENT SYMPTOMS.

The erythematous eruption on the skin may be preceded, accompanied, or followed by more or less well-marked inflammation of the pharynx, tonsils, and soft palate; mucous patches in the mouth; seborrhœa of the scalp, alæ nasi, and genital organs; and intertriginous inflammation of the inner surfaces of the thighs, scrotum, or vulva, perineum, and anal fold, called by some authors, improperly, "syphilitic eczema;" loss of hair, a small pustulo-crustaceous eruption of the scalp, articular pains, and, after longer continuance, papules, pustules, condylomata lata, etc. Hyde[1] mentions wandering pains in the extremities, and especially beneath the sternum, as frequent and "highly significant" symptoms of the erythematous syphilide.

DIFFERENTIAL DIAGNOSIS.

The erythematous syphilide is a frequent source of error in diagnosis. It may be confounded with measles, rötheln, scarlet fever, typhus and typhoid fevers, the prodromal erythema of small-pox, various erythematous eruptions due to the ingestion of certain drugs, non-specific erythemata, tinea versicolor, and ringworm.

Measles is always preceded by catarrhal irritation of the eyes, nose, and air-passages. The fever is also more marked than in the syphilitic exanthem. The eruption in measles is papular, the papules being closely aggregated, the patches having a crescentic arrangement. The face is usually first affected in measles, while in syphilis it is nearly always exempt from the eruption.

[1] Diseases of the Skin. Phila., 1883.

From the face the exanthem spreads over the whole surface of the body usually within twenty-four or thirty-six hours. The development of the syphilitic eruption is never so rapid as this.

From rötheln, the erythematous syphilide may be differentiated by the bright color of the former eruption, its papular character, and its brief duration. The eruption of rötheln appears rapidly, and fades away again in a day or two. The rash is also more profuse than the syphilitic exanthem.

Scarlet fever has such a characteristic clinical history that it would seem that no difficulty could arise in the differential diagnosis between this disease and the erythematous syphilide. The points of distinction are the high temperature, uniform, confluent, and extensive eruption and scarlet color of the latter. The comparative freedom of the face from the eruption and the anginose symptoms may lead to error, if the other marks of distinction are not borne carefully in mind.

The rose colored eruption in typhoid fever may simulate the erythematous syphilide. The distinct lenticular character of the eruption and the sparseness of the lesions, together with the other clinical symptoms of typhoid, will, however, serve to distinguish the two affections.

The mottling of the skin and the macular eruption in typhus fever could be readily mistaken for the erythematous syphilide, if the presence of the fever and the profound disturbances of function in typhus could be overlooked. The clinical features of this fatal disease are so marked, however, that no such mistake in diagnosis as here indicated ought ever to occur.

The prodromal erythema of small-pox is usually limited to the lower portion of the abdomen, the genital

region, and the upper third of the thighs. It is bright red, equally diffused, and not disseminated in spots. There is usually high fever also.

One of the erythemata not infrequently mistaken for the erythematous syphilide is the eruption sometimes following the ingestion of copaiba and cubebs. So frequently does this eruption follow the use of these drugs that some writers, notably Cazenave, taught that gonorrhœa is accompanied by an eruption resembling one of the syphilides. It is now established, however, that this "gonorrhœal erythema" occurs only in those cases who take copaiba, cubebs, or drugs of similar character.

Accompanying such a common venereal disorder, and therefore extremely liable to cause errors in diagnosis, the differentiation of this eruption demands some attention. The copaiba rash appears suddenly and rapidly becomes confluent and may cover the entire surface of the body like a sheet. Usually, however, the patches are grouped in localities where the skin is subjected to pressure, as, for example, about the neck, wrist, waist, etc. The face is not exempt. The eruption is accompanied by violent itching and burning, and there is generally some heat and tumefaction of the skin, symptoms which are absent in the erythematous syphilide. The eruption disappears in a few days if the drug is omitted.

In exceptional cases the administration or external application of mercurials may cause an eruption bearing some resemblance to the erythematous syphilide. Cases have been reported by Zeissl and Bäumler. It seems to be extremely rare. Benzoate of sodium, antipyrin, and some other drugs may cause an erythematous eruption, but in the former case the rash is especially local-

ized about the face, while the antipyrin eruption is usually very itchy. Erythema multiforme, in its varied manifestations, is usually easily diagnosticated from the erythematous syphilide. The non-specific eruption occurs in large patches with crescentic margins, appears, runs its course, and disappears in a few days, and is especially localized about the backs of the hands, wrists, and ankles,—parts especially exempt from the syphilitic eruption.

The eruption that is most frequently mistaken for the erythematous syphilide is tinea versicolor, one of the parasitic skin diseases. The localization of the eruption, its appearance, absence of fever and subjective symptoms, and its chronicity, all combine to give it a close resemblance to the specific eruption under consideration. The points of distinction are: the absence of a history of syphilis, the desquamation, the generally darker pigmentation, and the limitation, usually, of the eruption to the trunk, in the parasitic affection. A positive means of distinction is the recognition of the mycelial elements and spores of the microsporon furfur in the scales when examined under a microscope.

In recurrent erythematous syphilide, limited to the prepuce and glans, or the vulva, the eruption may give rise to the impression that it is a case of simple balanitis, or vulvitis, or, on the other hand, as already mentioned, the erosions produced may be considered as primary syphilitic lesions, which impression may be strengthened by subsequent infection of healthy persons during the sexual embrace. The annular form of the recurrent syphilide may be mistaken for erythema annulare or tinea circinata. The former is characterized by its localization, which is nearly always on the backs of the hands, while in the latter the mycelial elements and

spores of the trichophyton tonsurans can nearly always be found on careful microscopical examination.

MINUTE ANATOMY OF THE ERYTHEMATOUS SYPHILIDE.

The histology of the erythematous syphilide has been studied by Biesiadecki and Kaposi. The former found cellular infiltration of the tissues immediately around the capillary blood-vessels. The adventitia of the larger vessels of the corium contains round and spindle-shaped cells within the area of the lesion. The calibre of the capillaries leading to the papillæ is somewhat narrowed, owing to the cell-proliferation in the adventitia. In the papillæ themselves the vessels seem to be somewhat dilated. The connective-tissue corpuscles also show changes indicating beginning proliferation.

PROGNOSIS.

The erythematous syphilide generally yields readily to treatment. According to Zeissl, the eruption, if uncomplicated, is a favorable indication, as it shows a resistance of the deeper structures to invasion by the syphilitic poison. The recurrence of the syphilide without evidence of involvement of deeper tissues or organs is considered an especially favorable sign by this eminent syphilographer.

The Papular Syphilide.

In a case of syphilis passing through its regular evolutionary cycle, the papular syphilide is the second in order of the cutaneous manifestations of the disease. This lesion appears under several morphological characters, which differ so much clinically that they require separate description. In order to distinguish the peculiarities of each of these varieties of the papular syphilide, it will be well to make the following division :—

(*a*) The conical papular syphilide.
(*b*) The flat papular syphilide.
(*c*) The scaly papular syphilide.
(*d*) The moist papular syphilide.

(*a*) THE CONICAL PAPULAR SYPHILIDE.

[*Synonyms.*—Miliary syphilide, lichen syphiliticus, the small papular syphilide, papulo-granular syphilide.]

The eruption of the conical papular syphilide generally follows very closely upon or may be contemporaneous with the erythematous syphilide. Its period of eruption is usually completed within a week. Sometimes the entire eruption comes out in the course of forty-eight hours. It appears in the form of acuminate papules, from the size of a minute, punctiform elevation to two millimetres in diameter. The color of the papules is at first bright red, later becoming brownish or livid. The surface is smooth and shiny, except when covered with desquamating epithelium. At times the apices of some of the papules contain minute droplets of serum, constituting small vesicles. Some authors have described this stage of efflorescence as a separate variety, under the name of the vesicular syphilide. The vesicular stage of the papule is, however, very transient, the fluid being either re-absorbed or evaporating, leaving the papule capped by a small scale, consisting of the upper layer of the epidermis, which has been raised off from the rete below by the effused serum. During the involution of the eruption, which is usually a very slow process when untreated, lasting from two to three months, the color undergoes the modifications mentioned, and there is sometimes desquamation of the papular summits. In colored patients this is sometimes so marked as to give the lesions a distinctly white

appearance. When the papules become absorbed, they leave, according to Kaposi, minute depressions of the surface, to mark the seat of the lesions.

The acuminate syphilide is most freely distributed upon the face and back, but no portion of the surface is exempt from it. It is less frequent upon the palms or soles, where it may be substituted by the flat papular eruption. In some situations, particularly the genital region and the flexures of joints, it is aggregated in solid sheets, from two to five centimetres (one to two inches or more) in extent. Fournier describes this as a separate variety. The papules are sometimes, though not very frequently, arranged in circles or crescentic groups.

Differential Diagnosis of the Conical Papular Syphilide.—The disease most likely to be mistaken for this form of the papular syphilide is lichen planus. In many cases the diagnosis is very difficult unless other concurrent specific symptoms are present. I have at present under treatment a case of lichen planus in which this resemblance is striking. The main points of difference are the slower evolution in lichen and the tendency to become aggregated in patches with a flat surface. In lichen there is usually itching, while in the papular syphilide this symptom is rare. Papular eczema can generally be excluded by the dull color of the eruption and the intense itching.

Prognosis.—The conical papular syphilide is often exceedingly resistant to treatment, and may recur after disappearing. The recurrent form—sometimes after two or three years after the first outbreak—is usually only sparsely distributed in small groups and patches in the articular flexures of the elbow and knee (*Kaposi*).

(*b*) THE FLAT PAPULAR SYPHILIDE.

[*Synonyms.*—Lenticular syphilide, large papular syphilide, syphilide merisée.]

The flat papular syphilide differs from the preceding in the size, form, and distribution of the lesions, its frequency, and its mode of evolution. The lesions vary in size from five millimetres to two centimetres (one-fourth to three-fourths of an inch) in diameter. They are elevated above the skin, and either flat or slightly convex on the surface. The papules come out in succession, in a subacute or chronic course, and usually persist for months. Their shape is rounded or oval, and the color that generally characteristic of the syphilides. The base of the papules seems to be sunk deeply in the skin. They are firm to the touch of the finger, and cannot be made to disappear under pressure. The surface is either shiny or covered with minute, whitish scales. When undergoing involution they become smaller and flatter, and, when the infiltration has disappeared, a brownish pigmentation is usually left, which slowly fades out, and may give place to a whitish spot, indicating deficiency of pigment. There is sometimes, also, an absorption of normal tissue, leaving a slight atrophic depression to mark the site of the former lesion.

The lenticular syphilide is the most frequent form of the papular eruption. It is usually disseminated, not aggregated in groups, and may be found on almost any part of the surface of the body, although, like the other syphilides, it has certain seats of predilection and exclusion. Its favorite points of localization are the frontal, fronto-temporal, and occipital margins of the hairy scalp, the scapular and sacral region, the genito-crural fold, the angles of the mouth and nostrils, the

flexures of the elbows and knees, and the inner surfaces of the upper arms and the thighs. The face, except the localities mentioned, the extensor surfaces of the limbs, and the dorsal surfaces of the hands and feet are almost entirely exempt from the eruption of this lesion.

Difficulty in diagnosis can rarely occur between the flat papular syphilide and other cutaneous affections. When the papules are very scaly, they may suggest psoriasis; but the different localization, and, indeed, the entirely different clinical history of the latter disease will furnish a ready means of diagnosis. Subjective symptoms are absent in the syphilitic eruption.

This lesion is, like the miliary syphilide, frequently an early manifestation of syphilis. It is sometimes found accompanying the erythematous eruption, but it is not rare as a late form, being classed by some authors among the late secondary or intermediate eruptions. It frequently relapses after months or years from the date of its first appearance.

(*c*) THE SCALY PAPULAR SYPHILIDE.

[*Synonyms.*—Syphilitic psoriasis of the palms and soles, squamous syphilide, papulo-squamous syphilide, lepra syphilitica.]

This variety of the papular syphilide, although one of the most characteristic of the cutaneous manifestations of the disease, nevertheless gives rise to more mistakes in diagnosis than any other cutaneous lesion. Its study, therefore, demands especial attention.

As mentioned above, the erythematous syphilide, when it occurs on the palms and soles, frequently becomes scaly. The same modification occurs in the papular syphilide when it occupies these localities.

Indeed, the appearance of a papular syphilide of the palms is so strikingly different from the same lesion occurring upon other parts of the body that in naming it the elementary lesion is ignored, and most syphilographers speak of it as palmar and plantar psoriasis, while others term it the squamous syphilide. Both of these names are improperly used, since psoriasis is an independent cutaneous disease, as widely different as possible in essential nature from syphilis, while dermatologists and syphilographers are fully aware that the desquamative process in the eruption under consideration is merely a stage of involution in the history of the elementary lesion, *i.e.*, the papule.

The scaly papular syphilide develops in the following manner: Brownish-red papules, about half a centimetre (one-fourth of an inch) in diameter, appear upon the skin of the palms and soles. When they are abundant they may extend over the palmar and plantar surfaces of the fingers and toes. Sometimes, after the affection has lasted a long time, the eruption may invade the lateral surfaces of the fingers. The dorsum of the hand or foot is, however, never attacked.

At first these papules are not elevated above the surface, on account of the thickness of the epidermis, but the infiltration can readily be detected by the touch. Gradually the lesions become slightly elevated, and the surface becomes hard and callous, like the callosities produced by the use of certain tools. Presently the tops of the papules become detached spontaneously, or are scratched off by the patient, and leave a red base, surrounded by a finely serrated, whitish, scaly margin. The young epidermis on the surface of the lesion rapidly becomes dry and is exfoliated, and thus the desquamation becomes more or less continuous.

The deep lines in the palms and the flexures of the fingers are the preferred seats of the papulo-squamous eruption. On the plantar surface the concave arch is most frequently affected. The constant motion to which the integument of the palms is subjected causes deep fissures in the infiltrated skin. These sometimes extend into the cutis and give rise to severe pain with every movement of the hands or fingers. This constitutes one of the exceptions to the general rule that the syphilides are not accompanied by subjective symptoms. The eruption may extend along the fingers and invade the matrix of the nails, which become brittle and lose their lustre.

When the lesions have persisted a long time, the elementary characters are gradually lost, and a diffused, brownish-red infiltration, with a broken, squamous surface, is seen. In this stage there are often no other evidences of syphilis apparent on superficial examination, and an exact diagnosis may be difficult.

Differential Diagnosis of the Scaly Papular Syphilide.—"Quoties ego video pustulas istas in capite, aut rhagades in manibus, indicium certum profero Gallici: cætera signa fallunt nos, hæc certissima sunt" expressed the confidence of Gabriel Falloppio in the value of this lesion as a diagnostic mark of syphilis. Ricord, more positive than his predecessor of the sixteenth century, called the papulo-squamous syphilide of the palm and sole "the diagnostic of pox, written on the hand or the foot of the patient;" and Fournier, whom we may regard as among the greatest of modern syphilographers, states that "palmar or plantar psoriasis is a *veritable certificate of syphilis*,—an authentic certificate,—against which there is no possibility of protest." I should be glad to accept the assurances of these dis-

tinguished masters that a palmar psoriasis is necessarily syphilitic, were it not established, by a number of carefully observed and recorded cases, that a non-syphilitic psoriasis may occur upon the palms. This fact makes it necessary to point out the distinguishing features between the scaly syphilide of the palms and other affections that may be mistaken for it.

The disease most likely to be mistaken for the papulo-squamous syphilide is non-syphilitic psoriasis. In this disease there is a bright-red, slightly elevated base, covered with white, silvery scales. On scratching off the scales with the finger-nail, a thin pellicle is found, which, if detached, is followed by a droplet of blood. The lesion begins as a red papule, which soon becomes covered with the white scales, and which rapidly extends peripherally, so that, if closely examined, the true psoriatic lesion is found to consist of a pretty uniform sheet of elevated eruption, while the syphilitic manifestation is made up of individual papules, more or less closely aggregated, and only incompletely covered with scales. These are also more firmly adherent than in psoriasis, and often consist of little plates of cornified epithelium rather than fine, imbricated scales. Too much stress must not be placed upon the appearance of the scales, however, for the occupation of the patient, or the attention he pays to the cleanliness and culture of the skin generally, may materially modify the ordinary appearance of the eruption. Much more reliance should be placed upon the clinical history of the case, for although, as Ricord has well said, "the science of the physician is above the asseveration of the patient," much help may often be obtained from the patient's account of the origin and progress of the lesions. In true psoriasis there is

usually a history of repeated outbreaks since early youth. Furthermore, the eruption is especially liable to be localized upon the extensor surfaces of the extremities, the elbows and knees and the skin over the sacrum being the favorite seats of the psoriatic lesions. In psoriasis, moreover, there is more or less pronounced itching, while this symptom is generally absent in the syphilitic eruption. In cases of doubt, the aid of medicinal treatment may be invoked, in order to clear up the diagnosis. The syphilide will resist arsenic and yield to mercury, while psoriasis generally disappears if arsenic be given, but is not affected by mercury.

In scaly eczema of the palm there is always the characteristic infiltration, giving the peculiar "leathery" feel to the skin when pinched up; the itching is usually very troublesome, and there is a history of occasional vesiculation and "weeping" of the affected surface. The thickened skin is often deeply fissured, and the fissures may bleed or exude serum and cause severe pain at every movement of the fingers or hand. Upon the soles the epidermic accumulation is sometimes exceedingly great, being at times from one-half to one centimetre (one-fourth to half an inch) in thickness.

(*d*) THE MOIST PAPULAR SYPHILIDE.

[*Synonyms.*—Mucous patches of the skin, condylomata lata, pustula fœda ani, moist papules, plaques muqueuses, schleimpapeln, feigwarzen.]

Upon surfaces of the skin more or less constantly in contact with one another, as in the genital and perineal regions, the gluteal folds, the axillæ, between the toes, the folds of pendulous breasts, the umbilicus, or, in fact, any portion of the surface kept constantly moist and warm, the papular syphilide undergoes certain trans-

formations which necessitate description. The papules developing in such parts become macerated, the epithelial covering becomes softened and destroyed, and the whitish moist surface of the rete mucosum, with numerous little red points indicating the summits of the papillæ, presents itself to view.

The warmth and moisture tend to increase the nutrition of the parts, and the papular lesions, which on other dry portions of the cutaneous surface rarely exceed a diameter of half a centimetre, here undergo an excessive development, and the moist papular syphilide varies in size from one to two, three, or four centimetres in diameter.

These broad condylomata are distinctly elevated above the surface of the surrounding skin with a sharply defined margin, have a pinkish, bluish, or brownish surface, and discharge freely an offensive puriform secretion. The surface is sometimes much elevated, constituting a fungoid growth. Sometimes a large number of these mucous patches are closely aggregated together on surfaces especially favorable to their development. This is particularly liable to occur about the genitals, anus, or perineal region. I have seen a case in which the vulva, perineum, and the inner surfaces of both thighs nearly to the knees were so thickly covered with profusely secreting moist papules that the raw surface looked like a continuous erosion or ulceration, elevated above the surface. At the borders of such a patch, where the skin is kept dryer, the papules are less thickly scattered, and gradually the moist type is entirely lost, and the usual form of the dry papular syphilide is met with. Sometimes the moist surface undergoes ulceration, at others it becomes diphtheritic. In either event a loss of substance and healing by cicatricial tissue is likely to

follow. This is especially seen in those moist papules occurring on mucous membranes, as in the mouth, where the mucous patch is generally found in the shape of an ulcer.

Moist papules are among the most frequent early constitutional manifestations of syphilis. Their secretion is highly contagious, and from their situation they are particularly liable to propagate the disease.

Lancereaux[1] gives tables compiled from the works of Davasse and Deville, and Bassereau, showing the seats of predilection of this lesion in the two sexes.

In 186 women, the moist papules were seated :—

Upon the vulva, 174 times.

Upon the anus, 59 times.

Upon the perineum, 40 times.

Upon the buttocks and inner surface of the thighs, 38 times.

Upon the tonsils, 19 times.

Upon the nose, 8 times.

Upon the tongue, 6 times.

Upon the toes, 5 times.

Upon the face, 5 times.

Upon the navel, 3 times.

Around the nails, twice.

Upon the ears and velum palati, twice.

Upon the inguinal fold, twice.

Upon the neck, nipple, and cervix uteri, once.

In 130 men, the seat of the lesion was :—

At the anus, 110 times.

Upon the tonsils, 100 times.

Upon the scrotum, 60 times.

Upon the lips, 55 times.

Upon the glans and internal surface of the prepuce, *28 times.*

[1] Traité de la Syphilis, p. 168.

Upon the pillars of the palate, the tongue, and the internal surface of the cheeks, 73 times.

Between the toes, 11 times.

In the genito-crural fold, 5 times.

At the orifice of the nares, twice.

Upon the posterior wall of the pharynx, twice.

At the insertion of the toe-nails, twice.

At the meatus urinarius, in the axilla, upon the gums, and the internal face of the thighs, once.

Desprès[1] has reported five cases in which the moist papular syphilide was found in the external auditory meatus. The lesions have also been observed upon the external ear, the vocal chords, the lachrymal caruncle, and the conjunctiva.

Differential Diagnosis of the Moist Papule.—The only affection with which the moist papule or mucous patch is liable to be confounded is the pointed venereal wart, or gonorrhœal wart. The lesions are essentially different not only in their histology, but in macroscopic appearance, and attention is merely called to their difference here because the pointed warts are sometimes assumed to be syphilitic manifestations by careless observers. In rare cases, an excessively irritated ringworm of the genito-crural region may simulate the moist papular syphilide; but the free secretion, the offensive odor, the absence of itching, and the distinct elevation of the affected surface above the level of the skin in the latter will usually suffice to distinguish it from the non-specific disease.

MINUTE ANATOMY OF THE PAPULAR SYPHILIDE.

The histology of the syphilitic papule has been carefully studied by Cornil and Kaposi. The epidermal layer and the *rete* are preserved in the dry papule. The

[1] Cornil on Syphilis. Philadelphia, 1882, p. 131.

rete is, however, thinned at the apex of the papular lesion. At times the line of demarcation between the corium and the mucous layer is indistinct. The *rete* cells are dentated and have vacuoles. This is well shown in Figs. 33, 35, and 36 of Cornil's work on "Syphilis." Similar changes occur in the moist papule or mucous patch.

The corium and papillæ are infiltrated with small round cells which resemble white blood-corpuscles, but are usually much smaller. The papillæ are hypertrophied and project into the mucous layer, while the interpapillary prolongations of the *rete* also project deeper than normally into the connective-tissue layer. The color of the syphilitic papule is partly due to congestion and partly to actual extravasation from the engorged blood-vessels. Giant cells are also found in the cutis. The walls of the blood-vessels are studded with highly refractive nuclei, but the calibre of the vessels seems to be normal.

In the moist papules the same general histological features are maintained, but the papillæ are very much increased in size and knobbed or branched at their extremities. In the centre of a suppurating mucous patch, however, the epithelial layer may have entirely disappeared and the ulcerating surface of the papillæ, or even of the cutis itself, may present itself to view.

PROGNOSIS OF THE PAPULAR SYPHILIDE.

The papular syphilide usually runs a chronic course, but is easily influenced by appropriate treatment. Local as well as general measures must be employed. Moist papules are particularly liable to recur.

The Pustular Syphilide.

The pustular syphilide is generally the result of a breaking down of a papular eruption, and, were it not

for its clinical importance, should be described as a sequel of the papular lesions. It is met with in several forms, but a sufficiently accurate classification is into two varieties,—the small or miliary and the large or lenticular pustular syphilide.

(*a*) THE SMALL PUSTULAR SYPHILIDE.

[*Synonyms.*—Herpetiform syphilide, syphilitic acne, miliary syphilide, impetiginous syphilide, syphilitic impetigo.]

The small pustular syphilide generally results from a transformation of small papules. The apices of the papules become converted into a small collection of pus, which dries into a thin, fragile crust. The eruption is localized upon the same portions of the surface affected by the small papular syphilide, namely, the face, shoulders, and trunk. It is sometimes disseminated over the whole surface, and at others especially localized in groups about the joints, the hairy margin of the scalp, and the genital region. The pustules are usually acuminate, but rarely prominent. They are sometimes arranged in circular or crescentic figures. The hair and sebaceous follicles are favorite seats of the eruption. When involution of the lesion takes place, the contents of the pustule dry up, the infiltrated base diminishes in size, and absorption of the papular lesion is followed by a small spot of pigmentation, which gradually disappears, leaving the skin normal in color, or marked with white spots, showing atrophy of pigment. Sometimes, however, a small ulcer remains, which may take on destructive action and spread. Moderate febrile movement usually accompanies the development of pus in the papular lesions. The course of the eruption is very slow when untreated, the lesions suc-

ceeding each other in crops for three, four, or even six months.

The pustular syphilide is especially frequent in the colored race. Among whites, it, as a rule, affects only subjects of depressed vitality; for example, individuals whose health is broken down from overwork, underfeeding, exposure, or intemperance. It may occur, however, in persons of apparently vigorous health. In these cases, some authors look upon it as an evidence of affection by a malignant form of syphilis. I cannot agree to this view. In my opinion, malignity in syphilis, as in other infectious diseases, is a clinical peculiarity depending upon the individual, and not upon the infectious material.

Differential Diagnosis of the Small Pustular Syphilide.—The striking similarity to acne, which has given to the small pustular syphilide one of its synonyms, points to a source of difficulty in diagnosis. The distribution of the eruption upon the face, breast, and back, as well as the appearance of the lesions in acne, closely resemble the syphilitic manifestation. A careful examination will, however, detect objective differences in the lesions themselves, without the aid which the history of the case will give. In acne the papulopustules are painful, with a larger inflammatory base; the lesions are in varying stages of development; the pus is usually more deeply situated, reaching the surface from below; and when the pus is evacuated the involution of the infiltration is comparatively rapid. The crustiform scab of the syphilitic lesion is rarely seen in acne. The absence of pain or other subjective symptoms in the pustular syphilide is also an aid in making the differentiation. Rarely, cases of pustular eczema, *especially* when affecting the lower extremities, may be

mistaken for the small pustular syphilide. The other clinical features of eczema—itching, diffused infiltration, and discharge—will enable the distinction to be made with little difficulty.

(*b*) THE LARGE PUSTULAR SYPHILIDE.

[*Synonyms.*—Lenticular pustular syphilide, syphilitic ecthyma, variolaform syphilide, syphilitic acne, rupia.]

The large pustular syphilide presents itself in a greater number of varieties than the form just described. Its lesions vary in size from a split-pea to a thumb-nail, or larger. The pustules may be elevated above the surface, or flat. They are always seated upon a distinctly infiltrated base, and in the course of their involution become covered with crusts, which may attain a large size. The lesions are usually disseminated over the surface, generally sparing the palms and soles. After the crusts fall off, the infiltrated base may undergo a slow involution and absorption, or continue as an ulcerative lesion, to be more described fully later.

Rupia is a variety of the large pustular syphilide. The lesion consists of a pustular ring, whose centre is occupied by a large, irregularly pyramidal crust. The pustular ring is surrounded by a violaceous or bluish areola. The pustule and crust increase in size by peripheral extension. The base of the lesion consists of a shallow ulceration with a bloody, ichorous discharge on its surface.

Differential Diagnosis of the Large Pustular Syphilide.—The large pustular syphilide must be differentiated from small-pox, varicella, acne, pemphigus, impetigo contagiosa, and various non-specific pustular affections described by authors under the names of impetigo, ecthyma, etc.

In negroes, the pustular syphilide is at times strongly suggestive of small-pox. If a clear clinical history can be obtained, the differentiation is usually not difficult, but at times much doubt must occur. Thus, a colored man lately presented himself in my clinic in whom a disseminated pustular eruption, covering nearly the entire body, had followed a possible exposure to small-pox. The case came under observation just about the time when a small-pox scare was creating a little excitement. The lesions were strikingly like small-pox, with the exception that there was no umbilication of the pustules. This feature is, however, not an essential of the variolous exanthem, except at a certain stage. The appearance of lesions in varying stages of development, the length of time the eruption had been out, and the absence of fever or systemic depression led to an examination of the penis, which disclosed a sclerotic infiltration in the frænum preputii, and enlargement of the lymphatic glands of the groin. A diagnosis of pustular syphilide was made, which was confirmed by the subsequent history of the case.

In cases where the eruption is sparsely distributed the lesions sometimes assume the characters of varicella. The diagnosis in such cases can never be long in doubt, for the varicellar exanthem rapidly dries up, and besides is very rare in adults, who are most likely to be the subjects of acquired syphilis. Acne is sometimes mistaken for the large pustular syphilide, but the diagnostic marks of this disease pointed out above should suffice to distinguish the two affections.

A variety of the large pustular syphilide, termed by some authors the bullous syphilide, may sometimes be mistaken for pemphigus, and conversely. The bullous syphilide is very rare as a symptom of acquired syphilis,

being nearly confined to children who are subjects of inherited syphilis. The "syphilitic pemphigus," so called, is a grave symptom, and differs from true pemphigus in having blebs with purulent contents and an inflammatory border, and leaving an eroded or ulcerated base when the contents of the bullæ are evacuated or dried up. Impetigo contagiosa is so peculiar in its localization and appearance, being limited to the face and hands, evidently contagious and rapidly drying up, the lesions passing through their periods of development and involution usually within two weeks, that only a careless observer would fail to distinguish this disease from a syphilitic eruption.

Certain non-specific pustular eruptions, described by some authors under the names of impetigo and ecthyma, are sometimes mistaken for the pustular syphilide. These lesions usually occur in debilitated subjects, and can generally be traced to some local irritation. Thus, they are especially liable to occur in persons infested with pediculi, or scabies. Sometimes they are seen in individuals exposed to stress of weather, overwork, and improper or insufficient food. I have seen these atonic eruptions frequently in sailors and in the children of the poorest classes. The resemblance to the large pustular syphilide is so close in many cases that an absolute diagnosis is impossible unless the history of the patient is taken into consideration. Cleanliness, good food, and rest will, however, soon cause the non-specific eruption to disappear, while they have slight influence upon the syphilitic manifestation.

PROGNOSIS OF THE PUSTULAR SYPHILIDE.

The prognosis of the suppurative lesions of syphilis is less favorable than that of the other manifestations

of the disease heretofore considered. The concurrent symptoms are sometimes grave. Among the most constant is fever, which may be continuous and is probably, in part at least, septic in character. Suppurative iritis, onychia, induration of the testicle, joint-pains, pharyngeal and tonsillar ulcerations and alopecia are frequent concomitants. The large pustular syphilide, especially if followed by chronic ulcerative lesions, is of serious prognostic significance, inasmuch as it indicates a depravement of the constitution and diminished capacity of resistance to injurious influences.

The pustular syphilide is sometimes contemporaneous with the earlier manifestations of the disease, such as erythematous and papular eruptions. Except in colored patients, or in whites of broken-down constitutions, the pustular syphilide rarely occurs within six months after infection. If treatment of the disease has been early instituted, this eruption may never appear, or may be delayed for upward of a year.

Tertiary Syphilitic Eruptions.

In its early stages syphilis presents many of the clinical features which characterize the history of the eruptive fevers. There is a period of incubation, of febrile disturbance, and of eruption on the cutaneous and mucous surfaces, as described on preceding pages. Then the disease seems to disappear entirely, and the patient's usual condition of health is apparently re-established. In perhaps one-half the cases the end of the eruptive stage marks the termination of the disease; but, in the remaining half, after a varying interval, known as the period of latency, a series of lesions appear, which present marked differences from those that have gone before. While in the secondary or eruptive period

the manifestations of the disease are symmetrical, and the disease itself contagious and inoculable, both by means of the blood and particular secretions, normal or pathological, and transmissible to the offspring of diseased parents, these characteristics are not present when the disease has passed the secondary period. If the late or tertiary symptoms manifest themselves, they are more distinctly localized, are unsymmetrical, and, as a further point of distinction, do not yield readily to the same treatment. Furthermore, in this stage the blood and the products of the lesions are no longer regarded by many as inoculable, while some hold that hereditary transmission of the disease is no longer possible.

It may be stated, however, that many syphilologists of deserved high standing do not regard the last two propositions as incontestably established.

These peculiarities in the clinical history of syphilis have led Hutchinson to express the opinion that the so-called tertiary lesions of syphilis are merely sequelæ, and that at the time of their appearance the syphilis no longer exists in the individual. Hutchinson's view has been adopted by Bäumler, who has written what seems to me to be one of the best treatises on syphilis accessible to English readers.[1] Previous to Hutchinson, Virchow had already expressed the opinion that the tertiary symptoms of syphilis were due to renewed infection of the blood from local residual depots of syphilitic virus in the body. The English surgeon, however, is disposed to deny any blood-infection after the termination of the secondary, or eruptive period. The question cannot yet be regarded as settled. While Hutchinson's views have much plausibility, the evidence in their favor is by no means so direct and definite as he

[1] Ziemssen's Cyclopedia, vol. iii.

claims, and, from a purely clinical stand-point, it will be advisable to consider the tertiary period as still a stage in the development of syphilis. An additional reason for considering this period as a true stage of syphilis, and not as a mere sequela, is, that it is really the most grave period of the disease. The early stages of syphilis are not periods of danger to life; but in the gummatous stage, when important internal organs become affected, the disease frequently proves fatal. Hence, the period of gummatous lesions of the skin is one of great prognostic importance; for, when gummata occur in the skin, they are probably also invading internal organs.

THE TUBERCULAR SYPHILIDE.

[*Synonym.*—Syphilitic lupus.]

The tubercular syphilide marks, in a general way, the transition from the so-called secondary to the tertiary or gummatous stage of syphilis. In fact, the syphilitic tubercle is, anatomically, practically a gummy tumor of the skin. However, the degree to which the gummatous or specific granulomatous material is infiltrated seems less in the tubercular syphilide than in the true gumma.

This lesion is one of the later manifestations of syphilis. It rarely occurs before the third year after infection, and may be delayed for five or ten years or, perhaps, even longer.

The syphilitic tubercle appears in the form of pinkish- to brownish- red or violaceous lesions, varying in size from a split-pea to a bean or larger. The nodules are circumscribed, easily defined against the surrounding skin, and extend through the entire thickness of the integument. They may be flat or project above the surface. They are usually firm to the touch, and the color only partially disappears under pressure with the finger.

The tubercular nodules may be single or multiple. In the latter case they are usually aggregated in groups forming small nodular patches. There may be healthy skin between the individual tubercles, or these may be so thickly set together as to give the appearance of a uniformly-infiltrated patch. Should the patch increase in size, it seldom does so equally in all directions, but progresses in one direction, while retrogressive changes follow.

The evolution and course of this syphilide are essentially chronic. It develops slowly and may last for months without change, simulating various other new formations of the skin, such as lupus, leprosy, or cancer.

The tubercular syphilide may occur on any region of the body. It is, however, most frequently found upon the forehead, nose, and lips, or at the angles of the mouth. On the trunk the seat of predilection seems to be the scapular region. The extensor surface of the forearm near the elbow is also frequently the seat of the eruption.

The conformation of the tubercular patches is sometimes very remarkable. I have seen one case in which the groups of tubercles were situated about the area of distribution of a branch of one of the thoracic nerves, resembling, on superficial examination, the pigmentations following an eruption of herpes zoster.

Concurrent Symptoms.—Among the manifestations of syphilis which accompany the tubercular eruption are paronychia, lesions of the nervous centres, mucous patches, endarteritis, cachexia, purulent iritis, and alopecia. It is rare to find any remains of the initial induration contemporaneous with the tubercular syphilide.

Differential Diagnosis of the Tubercular Syphilide.—The disease with which the tubercular syphilide is most frequently confounded is lupus. In fact, the resemblance is often so great that some authors have cut the Gordian knot by describing a syphilitic lupus. This is an equivocal and indefinite expression, and should be discountenanced. It is much better to avoid making a diagnosis altogether than to use a term which is vague and meaningless.

By careful attention to the clinical history and appearance the diagnosis between these two affections can usually be made. Lupus nearly always begins before the twentieth year, and in the majority of cases, probably, before puberty. A tertiary syphilide is unlikely to occur before adult life is reached. Lupus is much slower in its progress than syphilis. The advance of the lupous infiltration is measured by years; that of the tubercular syphilide by weeks or months. Should ulceration occur, the destruction by the syphilitic process is much more rapid than by the lupus; the ulcer in the latter disease is more likely to be shallow, with sloping borders and non-infiltrated base. The syphilitic ulcer is deep, with a punched-out appearance, and covered with a profuse, offensive secretion, or with dirty-greenish, massive crusts. In lupus the ulcer is generally painless, while the contrary is the case with the ulcer of syphilis. Finally, if doubt still exists, the aid of antisyphilitic treatment may be invoked to clear up the diagnosis.

Sycosis may sometimes closely resemble a tubercular or gummatous syphilide. In sycosis the inflammatory symptoms are usually predominant, while they are wanting in the syphilitic growth. In the latter the demarcation between normal and diseased skin is usually clearly defined, while in sycosis or other inflammatory tubercu-

lar affections the redness of the skin shades off gradually into the normal color.

The tubercular syphilide may be mistaken for tubercular leprosy in one of the stages of the latter disease. In leprosy, however, the tubercles are likely to be situated about the brows rather than at the margin of the hairy scalp; the lobes of the ears and tip of the nose are also often invaded, and superficial ulceration of these spots of infiltration is not uncommon. There is usually anæsthesia of the leprous tubercles, and a careful microscopic examination by an expert bacteriologist will discover the *bacillus lepræ*. The thickening of the ulnar nerve and the anæsthesia of the hands will also be aids in the diagnosis.

Some cases of dry, scaling, tubercular syphilide may simulate psoriasis, but the limited extent of the lesions, the character of the scales, and the difference in appearance of the infiltrated base will suffice to distinguish the two affections.

Prognosis of the Tubercular Syphilide.—The prognosis, so far as the lesion itself is concerned, is favorable. With proper treatment it can usually be cured with comparative rapidity. When it advances to ulceration, instead of undergoing resolutive absorption, it may produce disfiguring scars or destroy important structures. It is as an index of the stage of the luetic disease itself, however, that the tubercular syphilide has a prognostic importance. It is in the stage of gummatous formations when important internal organs, brain, liver, kidneys, lungs, and heart become affected. Hence, the appearance of tubercular or gummatous lesions of the skin is a warning that similar processes are probably going on in the internal organs, and demand prompt and appropriate measures for their arrest.

THE NODULAR SYPHILIDE.

[*Synonyms.*—Gummous syphilide, gummy tumor, syphilitic gumma, syphiloma.]

The true gummatous syphilide is a late or tertiary lesion. It may attack any tissue or organ in the body. It was noticed and described by some of the earliest writers upon the venereal disease. Juan Almenar (1502), Ulrich von Hutten and Giovanni de Vigo (1519), Jerome Fracastori (1530), Nicolas Massa (1532), Leonardo Botallo (1563), and Gabrielle Falloppio (1565), all referred to the occurrence of gummata in the course of syphilis. Falloppio apparently first gave currency to the belief, which has found defenders in more recent times, that the administration of mercury was responsible for the appearance of gummy tumors. Ulrich von Hutten had, however, previously pointed out that gummata occurred in those who did not take mercury as well as in those who used this remedy.

The gummy tumor is a specific manifestation of syphilis. It is found in no other disease, and is, when present, characteristic of syphilitic infection. It occurs in the form of globular nodules, beginning in the deeper layers of the skin, or the subcutaneous connective tissue. When the tissue in which the nodules develop is loose, they are movable and non-adherent. Later, as they involve the upper layers of the skin and cause irritative inflammation, they become adherent. Usually gummata are not painful, unless seated over nerves, or the inflammatory process accompanying them invades the skin, periosteum, or serous membranes, when they cause exquisite suffering. At first the normal color of the integument is preserved, but, later, it becomes pinkish, red, brown, or bluish red. In size the nodular syphilide

varies from a pea to an almond. In some cases the tumors may reach the size of a hen's egg, but this is rare.

The nodules may undergo resolution or suppuration. In the former case the growths become softer, flattened, and gradually disappear, leaving a grayish pigmentation, which slowly gives place to a slight atrophic spot, showing deficiency of pigment.

In by far the larger number of cases the gummy tumor breaks down and ulcerates. The centre becomes softened, and the skin is finally perforated in one or more places, discharging a small quantity of sanious purulent matter. The mass of infiltration constituting the tumor rapidly undergoes suppuration, and a ragged, undermined ulcer is produced, which sometimes extends through all intervening tissues to the bone. This is frequently observed in gummy tumors of the forehead and scalp. After the infiltrated material has all been thrown off by suppuration, granulation begins, and the ulcer may heal, leaving a pigmented scar to mark its location.

As already mentioned, the tertiary manifestations of syphilis are seldom symmetrical. They are also more limited in distribution and extent than the secondary eruptions. The nodular syphilide may be limited to a single lesion, but, commonly, the tumors are more numerous.

Minute Anatomy of the Nodular Syphilide.—Some pathologists have claimed that the histological elements of a syphilitic gumma possess specific characters by which they can be at all times recognized by competent observers. Virchow, however, pointed out that this view is not tenable, as the syphilitic infiltration does not differ from that peculiar to the class termed by him

granulomata, to which lupus, leprosy, and tubercle also belong. Since the discovery of the bacilli of leprosy and tuberculosis, the new formations in these diseases can be easily differentiated, and the recognition of the tubercle bacillus in lupus gives an additional diagnostic aid between this affection and a syphilitic new growth. It is possible that a confirmation of the asserted discovery of a specific microbe of syphilis, by Lustgarten, and by Disse and Taguchi, may give the pathologist a means of always making a positive diagnosis of a syphilitic infiltration by means of the microscope. At present the histological diagnosis of syphilis is beset with as many difficulties as are those of cancer and sarcoma. The relations of the infiltrated elements to each other and to the tissue in which they are imbedded, must be considered as well as the characters of the individual elements themselves.

The gummy nodule consists, according to Kaposi, of a "uniform, dense, small-celled infiltration of the affected tissue. It is not accompanied by the phenomena of inflammatory infiltration, such as serous transudation, vascular dilatation, and looseness of texture of the connective tissue, but, on the contrary, the infiltrated area is drier and denser than normal." Around the circumference of the infiltration there is irritative inflammation with consequent new formation. This is not specific in character, however, and may undergo organization into cicatricial tissue, which never occurs with the syphilitic infiltration itself. The latter is either absorbed or is thrown off by suppuration or sloughing. It never becomes organized into stable tissue.

Differential Diagnosis of the Nodular Syphilide.—The diagnosis often presents considerable difficulty. When the gummy tumor is softened and on the point

of breaking through the skin, the resemblance to a boil or an abscess is often very great. Even when perforation has occurred, the gumma may readily be confounded with a boil or carbuncle. The throbbing pain and fever of the furuncle may aid in the diagnosis, but a gummy tumor, in certain situations, may be extremely painful. Boils and carbuncles usually develop rapidly, while the evolution of a syphilitic nodule is slow, requiring weeks before the covering of integument is sufficiently softened to permit perforation. Should a gumma be incised in mistake for a boil, the character of the contents will readily distinguish it from the latter.

Enlarged lymphatic glands and scrofulous infiltration of the skin not rarely present a remarkable resemblance to the gummatous syphilide. The glands can, however, usually be isolated in their proper anatomical location, while the diffuse, strumous infiltration which is sometimes seen, especially about the neck, is usually extensively undermined, and the soft, diseased skin perforated at a number of points, from which a thin pus is discharged. The scars of scrofuloderma are also intersected by ridges or papillary elevations. The scar following a syphilide is usually depressed and atrophic, although in rare instances it may present the characters of keloid.

Epithelial molluscum may simulate the nodular syphilide. I have recently seen a case of this affection in a colored woman, in which even the contents of the tumor consisted of a gummy fluid. The principal points of differentiation are the number of lesions (these are much more numerous in molluscum) and the non-indurated base and border of the nodules in the latter affection, and the slight umbilication marking the duct of the gland whose cystic dilatation causes the disease under

consideration. In most cases, also, the molluscum nodules have a constricted neck, *i.e.*, are pediculated.

Lenticular cancer of the skin is another affection sometimes mistaken for the nodular syphilide. It occurs in hard, flat, or slightly convex, definitely circumscribed nodules, which are usually secondary to a carcinomatous growth in the vicinity. The surface of the cancerous nodules is smooth, shiny, of a pinkish color, and well supplied with blood-vessels. They do not soften down in the centre, like gummy tumors, but ulcerate superficially.

Fatty tumors may be confounded with syphilitic gummatous nodules. Their slow development, soft and semi-elastic consistence, and absence of all induration will suffice to make the distinction.

The tumors of erythema nodosum, especially when a clear history of the case cannot be obtained, may simulate very closely the gummatous syphilide. If the patient be kept under observation a few days, a diagnosis can usually be made with little difficulty. The lesions of erythema nodosum pass through their successive stages of development much more rapidly than those of the nodular syphilide. The accompanying symptoms, such as pain, localization of the lesion, fever, and color of the nodules may be the same in both affections. Hence an absolute diagnosis is sometimes not possible at sight.

Multiple sarcoma of the skin may very readily be mistaken for the nodular syphilide. The tumors develop slowly, are non-inflammatory, are often of a brownish color, and sometimes soften in the centre in a manner to closely resemble the syphilitic nodules. It is extremely important to make the distinction, since the *prognosis* differs so widely in the two diseases. In some

cases, nothing short of the aid of a trial of specific medication will enable one to make a positive diagnosis. When the disease is advanced and ulceration of the sarcomatous lesions has begun, the differentiation is less difficult. Happily, multiple sarcoma is very rare, and this diagnostic problem will seldom present itself for solution.

Prognosis of the Nodular Syphilide.—The stage of syphilis characterized by the manifestations described above is the most serious in the history of the disease. During the secondary stage, or period of symmetrical eruption, the lesions are more or less superficial, but in the tertiary stage the deeper structures and organs are liable to invasion. Hence the appearance of superficial gummata, although the lesions in themselves are, perhaps, of little import, calls attention to the fact that the syphilitic virus is not entirely eliminated, and may at any time cause serious mischief. For this reason the gummatous syphilide is always of grave prognostic significance.

THE ULCERATING SYPHILIDE.

As stated on page 211, the ulcerating syphilide is consecutive to a syphilitic infiltration which primarily assumed one of the manifestations already discussed. It may follow the moist papular, the pustular, the tubercular, or the nodular syphilide. Its clinical importance entitles it to separate consideration. It must be remembered, however, that the syphilitic ulcer is never a primary affection, but always consecutive to a previous infiltration.

The syphilitic ulcer possesses certain features which distinguish it from other similar lesions. These are a rounded shape, steep or undermined, ragged edges, infiltrated base and border, and pain and tenderness of

the ulcer. The ulcerated surface is generally covered with a grayish-yellow pus, and sometimes a thick, irregular crust masks the destructive lesion beneath.

The ulceration does not extend beyond the syphilitic infiltration. The destructive process ends abruptly where healthy tissue begins. This accounts for the steep edges of the ulcer. The syphilitic ulcer does not enlarge unless there is a continuation of the syphilitic infiltration at its periphery. When healthy tissue is reached, the process of repair begins. This can, however, never take place until all the syphilitic new formation is absorbed or cast off, either by the ulcerative process or by therapeutic means.

The rounded shape of the ulcer is not always maintained as it progresses. It may assume an oval, kidney-shaped, or irregular form. Not infrequently cicatrization takes place at one segment of the ulcer, while destruction advances at another. In other cases, the ulcer cicatrizes in the centre and the ulceration extends peripherally. When several contiguous ulcers run together, or when an ulcer extends over a large surface, following the proceeding just described, the lesion is called a serpiginous ulcer or serpiginous syphilide.

Upon the hairy scalp the ulcerating syphilide at first presents the characteristic steep and ragged edges, but, as neighboring ulcers run together and the bottom becomes somewhat covered with granulations, the ulceration becomes more shallow, with prominent, undermined edges and easily-bleeding base. The secretion is thin, sero-purulent, and offensive. Mixed with the secretion from the sebaceous glands it dries into thick, dirty, greenish-yellow crusts and scabs which have a rancid odor. The pus may penetrate under the scalp and collect in depending positions, as the back of the neck or the

eyelids, and be accompanied by erysipelas and glandular enlargements. The granulations may become hypertrophic, projecting from one-fourth to half an inch above the surface. These bleed easily and secrete a serous fluid which dries into crusts. These hypertrophic granulations sometimes become veritable papillomata.

The cranial bones are sometimes, though not very frequently, laid bare by the ulcerative process. When this takes place, necrosis of a circumscribed portion of the outer table of the skull is likely to occur. In rare cases, even the dura mater is laid bare by necrosis of the cranium in its entire thickness. Strange to say, the meningeal membrane is very seldom destroyed by the ulcerative process.

The diagnosis of the ulcerative syphilide of the scalp is sometimes rendered difficult by the absence of a connected history, and occasionally by the results of local therapeutic interference which may mask the characteristics of the affection. I have seen one case of extensive epithelioma of the scalp in which the diagnosis was exceedingly difficult. In fact, the suspicion is still strong in my mind that the ulceration in this case was syphilitic in the first place, and only became malignant in consequence of the long-continued irritation. The peculiar and characteristic infiltration of the border is the only mark of differentiation between the cancerous and syphilitic ulceration.

Lupus is generally easily differentiated by its history, the fact that the ulcers are usually shallow and painless, not secreting an offensive pus, and extending by nodules at the periphery. The secretion and crusts of a lupous ulcer of the scalp are usually less profuse and abundant than in the ulcerating syphilide.

That curious disease of the hair-follicles of the oc-

cipital region, described by Kaposi as dermatitis papillaris capillitii, and by English authors as acne keloid, bears many resemblances to a gummato-ulcerating syphilide. The only point of differentiation to which I can call attention is the localization of the eruption and the characteristic "bunching" of the hairs in the follicles.

The syphilitic ulcer of the face sometimes presents a very close resemblance to epithelioma. The absence of the hard infiltration characteristic of cancer and the rapid progress of the syphilitic ulceration will generally allow a definite diagnosis. Probably the greatest difficulty will be prevented, however, by the differentiation between the ulcerating syphilide and lupus. When it occurs upon the nose the resemblance between the two processes is sometimes so close that the best clinicians will be unable to make a positive diagnosis. In these cases the history of the case will often be a very useful aid. Lupus is slow in progress, and in by far the majority of cases begins before the twentieth year. The ulcerating syphilide is rapidly destructive and is rarely found before adult life. A case in which the ulcerating syphilide occurs will often show other manifestations of syphilis, or relics of the same. Thus, glandular enlargements, scars of the genitals or of the mucous membrane of the mouth and throat, evidences of old iritis, in female patients repeated abortions, or the birth of dead children at term; sometimes the physical condition of the offspring will shed light on an obscure case. All these things must be borne in mind and carefully considered when great difficulty arises in the differentiation of these affections. When other means fail, a specific course of treatment will often enable a positive diagnosis to be made in the course of two or three weeks.

In leprosy ulcerations occur which may be mistaken

for the ulcerating syphilide, but the accompanying symptoms of that disease, already pointed out on a previous page, should make the diagnosis easy. As a general rule, the ulcerations in leprosy are shallower and less destructive than those of syphilis.

In the neighborhood of joints the ulcerating syphilide is sometimes very persistent, progressing superficially in a serpiginous form. This variety of syphilitic ulceration is not infrequently found about the shoulder and elbow. It resembles lupus most closely, but can generally be differentiated by the characters above pointed out.

One of the most frequent seats of the ulcerating syphilide is the leg and thigh. When occupying the leg, the syphilitic ulcer presents certain characteristics which should render a diagnosis comparatively easy. An English surgeon, Mr. Maunder, I believe, has pointed out that syphilitic ulcers of the leg are generally multiple and occupy the upper half of the leg, while traumatic or varicose ulcers are usually single and located near the ankle. The cause of this localization of varicose ulcers near the ankle has been explained by Mr. Hilton in his profound lectures on "Rest and Pain." "The superficial and deep veins of the leg freely communicate with each other in the neighborhood of the ankle-joint. The first two inches above that point is the spot where the greatest stress is laid upon these superficial veins; below that point they freely communicate, and if the blood cannot return by superficial veins it can do so by the deep veins, and *vice versâ*. But when you reach the point where that brown patch of skin so often occurs in old persons—above the inner malleolus—the anastomoses are less free; and this appears to me to be the reason why ulcers from varicose veins occur so frequently about that neighborhood."

In some cases, the clinical features of elephantiasis arabum are simulated by syphilitic ulceration of the lower extremities and its consequences. In fact, in these cases we have, practically, the same pathological condition that exists in elephantiasis, namely, obstruction and dilatation of lymph-channels, and consequent new formation of connective tissue.

Prognosis of the Ulcerating Syphilide.—The prognosis of the ulcerating syphilide, if the process is uninfluenced by treatment, is unfavorable. In most cases the ulceration does not only continue until the initial infiltration is destroyed, but new deposit of the morbid material continues at the periphery, and the ulcerative process is indefinitely prolonged. Appropriate therapeutic measures, however, will, in the majority of cases, produce rapid absorption or destruction of the infiltration and healing of the ulcer. If, therefore, a correct diagnosis is made, the prognosis is generally favorable.

THE PIGMENTARY SYPHILIDE.

[*Synonyms.*—Syphiloderma pigmentosum, macular syphilide, tâches syphilitiques.]

Pigmentation of the skin, in the course of syphilis, is not infrequent. Syphilographers do not agree, however, upon the exact etiological relation in which syphilis stands to the pigmentary changes. Hardy, Pillon, Fournier, Schwimmer, Drysdale, I. E. Atkinson, and Duhring are of the opinion that the lesion is a true syphilide. On the other hand, Zeissl, Kaposi, Taylor, G. H. Fox, and Hyde regard it as merely a sequence of a foregoing syphilide, or an evidence of syphilitic cachexia. My own view is in accord with that of the observers first cited above. I am quite sure, however, that the true pigmentary syphilide is rare, and that

most cases of pigmentation of the skin occurring in syphilitic subjects are merely consecutive to a syphilitic infiltration, or an expression of a cachectic condition.

A very good account of the pigmentary syphilide has been given by Pillon, who describes it as follows: "On the skin of the neck, which in women is so white, so delicate, and so free from hair, this maculated syphilitic eruption shows itself in the form of mottled discolorations, communicating with each other and circumscribing healthy spaces, the whiteness of which is brought out in such bold relief as to lead one at first to believe that these white spaces are the seat of the disease, and to give them the appearance of patches of leucoderma. This mottling, without elevation above the surface—of an ochre or coffee-and-milk color—is neither painful nor itchy, and it may be present without being discovered. There is neither desquamation nor eruption; the edges are uneven and ill-defined, and gradually fade away into the intermediate normal-colored spaces. Meeting and uniting at other points, the pigmented lines constitute a kind of net-work, inclosing in its meshes the white spots above mentioned."

The pigmentary syphilide is usually localized upon the neck. Fournier found it twenty-nine times out of thirty in this locality. It may be limited to a few patches, or may encircle the neck like a broad collar. It is also found upon the limbs, and sometimes upon the trunk. Nearly all observers state that it is much more frequent in females than in males. A short definition given by Fournier is as follows:—

"A macular lesion of the skin, appearing in the secondary period of syphilis, almost exclusively occurring in women, occupying the cervical region, aprurig-

inous, slow in development, and rebellious to treatment."

Diagnosis of the Pigmentary Syphilide.—The true pigmentary syphilide must be differentiated from the pigmentation left after other syphilitic eruptions, from chloasma, tinea versicolor, and cachectic pigmentations.

The pigmentation following other syphilides has usually a clear history of the preceding eruption, and, even if this be missing, the lesion is almost distinctive. In the erythematous and papular syphilide the neck is rarely the site of the eruption. Ulcerating syphilides, which are often followed by pigmented scars, leave such a decided impression that their pre-existence can be predicated, even if no subjective history of the case can be obtained.

Chloasmata, or moth-patches, are, like the pigmentary syphilide, almost exclusively met with in the female sex. They are found especially about the face, more particularly the outer limits of the brow, the cheeks, and the chin; are frequently associated with uterine disease, have no connection with syphilis, and seldom extend to the neck, the place especially liable to attack by the pigmentary syphilide.

Tinea versicolor presents some points of similarity with the pigmentary syphilide, and may readily be mistaken for it. The spots and patches of tinea versicolor are, however, usually found upon the chest, abdomen, and arms, and only exceptionally—perhaps never exclusively—upon the neck. The surface is not smooth, as in the syphilitic discoloration, but covered with furfuraceous scales, which can be easily scratched off with the finger-nail. Microscopic examination of these scales will disclose the presence of mycelium and spores of microsporon furfur, the parasite to which tinea versicolor

is due. This fungus is absent in the pigmentary syphilide. A further point of distinction is the absolute lack of subjective symptoms in the syphilitic stain, while in tinea versicolor there is often slight itching. Finally, appropriate parasiticide treatment will produce a rapid disappearance of the parasitic discoloration, while it will have no effect upon the pigmentary syphilide.

Pigmentations due to various cachexiæ, such as the malarial, cancerous, or syphilitic diathesis, so called, or to anæmia from any cause, may be easily differentiated from the true pigmentary syphilide by the more or less general distribution of the cachectic pigmentation, the absence of the sharp outlines between the light and dark areas, and concurrent evidences of anæmia.

Leucoderma often presents very great similarity to the pigmentary syphilide, but upon careful examination it will be found that the white patches are due to an absolute diminution of pigment, while in the syphilitic lesion the whiteness of the spots is only relative, owing to the deeper pigmentation of the surrounding skin. Cases in which white spots of the skin follow upon the sites of syphilitic scars must be differentiated from both these affections.

Melanoderma, occurring in the course of Addison's disease, is usually more pronounced in those regions where there is normally excess of pigment, as in the areolæ of the nipples, on the genital organs, backs of the hands, etc. Later in the course of the disease the pigmentation becomes uniformly diffused. In none of the forms of cachectic pigmentation is the neck a special site of predilection, as seems to be the case with the pigmentary syphilide.

Prognosis of the Pigmentary Syphilide.—Fournier states that the usual duration of the pigmentary syphi-

lide is much longer than that of all other syphilides. It may last many months, or even a year or two, without undergoing any perceptible change. The lesion is only annoying from its appearance. It neither itches nor burns, nor does it ever ulcerate and leave scars.

Specific treatment seems to have no effect whatever upon the continuance of the lesions, or only modifies them "with despairing slowness."

SYPHILITIC ALOPECIA.

Falling out of the hair is not mentioned as a symptom of syphilis by the earliest writers upon the disease. The first authors who refer to it are Fracastori, Brassavola, and Falloppio, who agree in the statement that this symptom was first observed between 1530 and 1540. Not only the hair of the head, but also that of the beard and eyebrows fell out, which, as Brassavola says, "has a ridiculous effect, and raises mirth in the beholders." Nicolas Massa, one of the most accurate observers of the sixteenth century, also wrote thus accurately of the alopecia of syphilis: "*Et quoniam inter quam plurima morbi gallici accidentia, depilationes capillorum, barbæ, aliarum partium corporis.*" Mercury was accused of causing this, as well as some of the other accidents of syphilis, but Fracastori and other writers showed that alopecia was not confined to those syphilitics who were treated with mercury.

Syphilitic alopecia is one of the early symptoms of the secondary period of the disease. The hairs become dry, lose their lustre, and fall out. The degree of baldness produced is seldom great, and is never permanent. In many cases only a uniform thinning of the hair is noticeable, as new hairs grow out before the defluvium

is completed. Cases in which the hairs of the beard, eyebrows, axillæ, or genital region fall out are rare.

Sometimes the alopecia is accompanied by and probably, to some extent, dependent upon seborrhœa of the scalp. In other cases the hair falls out in patches, which, if closely examined, are found to be scaly and reddened. These are patches of the erythematous syphilide, and the hair falls probably in consequence of the local morbid process.

The cause of the syphilitic alopecia, unaccompanied by seborrhœa or inflammation, is rather difficult to explain. We can only assume that the specific virus produces some changes in the nutrition of the hair, which result in atrophy. Some authors claim that the general impoverishment of the blood in syphilis is sufficient to account for this defective nutrition, but it seems to me that this would not account for it. In other diseases (non-specific in nature), even greater impoverishment occurs without producing the same effect upon the hair.

Fournier describes four degrees of syphilitic alopecia, but this seems to me an unnecessary refinement.

Diagnosis of Syphilitic Alopecia.—The diagnosis between syphilitic alopecia and alopecia areata is not difficult. In the latter the hair falls out suddenly, and perfectly bare and white patches, with no scales, broken hairs, or pustules, are seen. In syphilitic alopecia the fall of hair is more gradual; it is rarely circumscribed, as in alopecia areata, and, if erythematous patches on the scalp become denuded, there is usually a reddened base, covered with scales.

The baldness produced by tinea tonsurans is generally easily recognized by its scaly base, papulo-pustular border, and the broken, "stubbly" condition of many of the hairs on the affected patch and vicinity.

The prognosis of syphilitic alopecia is favorable. In some cases, however, where the hair falls out, in consequence of suppuration or ulcerative destruction of the hair-papillæ, regeneration of the hairs can, of course, not be expected; but these cases cannot properly be included under the designation of syphilitic alopecia.

SYPHILITIC DISEASES OF THE NAILS.

Brassavola mentions diseases of the nails (ungiarola) as a manifestation of syphilis. Two affections are described by authors,—one affecting the nails proper (onychia) and a second attacking the periungual tissues (paronychia, or perionychia).

In the first variety there is morbid brittleness, partial or complete separation, and hypertrophy of the nail. The diseased portion of the nail is gradually pushed forward by the new growth of ungual substance from the matrix, and a new, perfectly or imperfectly formed nail takes the place of the diseased one. This process is usually without pain or other subjective symptoms.

In syphilitic paronychia, the seat of the disease is in the soft tissues under or around the nail. It may be simply a papular syphilide localized about the nail, or a gummatous infiltration, which often undergoes ulceration. This form is painful and obstinate. When it affects the toes, it often interferes, to a great degree, with locomotion.

TREATMENT OF THE SYPHILIDES.

The treatment of the syphilides comprises both general treatment and local management. In most of the text-books the latter is considered of subsidiary importance, but I regard it as deserving almost as much attention as the treatment of the general condition. No one who has had any experience in the treatment of

venereal diseases can fail to appreciate the advantage of promoting the disappearance of an eruption upon the exposed portions of the body, as the face and hands, while it is notorious that many of the later manifestations of the syphilitic virus can only be cured by appropriate topical treatment.

I. GENERAL TREATMENT.

Naturally, the first point to consider is the general specific treatment. As regards the time when this should be begun, I am decidedly of the opinion that it should be systematically instituted so soon as a positive diagnosis is made. I can see no advantage in delaying specific medication until constitutional symptoms make their appearance. Cases may sometimes present themselves in which it is better to begin specific treatment, even if the diagnosis is somewhat in doubt. I hold it of more importance to cure the patient than to make a faultless diagnosis.

In the early stage of syphilis—that is, within six months after the appearance of the initial lesion—the remedy above all others is *mercury*. At this period the iodides are of little value, and had better be omitted. During the later manifestations of the secondary stage the "mixed treatment" (mercury and iodides combined) finds its most effective application, while in the so-called tertiary stage the main reliance must be placed upon the iodides.

The methods of administering mercury are various. Probably the most frequent way of giving it is by the mouth. Other methods are inunction, fumigation, and hypodermatic injection. Each of these methods has strong advocates, but in general practice it is often inconvenient to use any but the first named.

In giving mercury *per os* any of the preparations employed for internal use may be administered. Many practitioners use blue mass; others, calomel; others, again, the iodides, mercury with chalk, bichloride; and, recently, Lustgarten has advocated the tannate, "hydrargyrum tannicum oxydulatum." In using those preparations which are liable to prove irritating to the intestinal canal, the mercurial is generally combined with some corrective, which may, in some cases, add to its effect. It must not be forgotten that the prolonged use of mercury and the iodides, in large doses, results in depravation of the blood, and that hæmatic tonics are indicated in combination with the specific remedies.

The following are some of the most efficient formulæ used in the internal administration of mercury in syphilis:—

℞ Massæ hydrarg., ... gr. xl (2.6).
Ferri sulph. exsic., ... gr. xx (1.3).
Ext. opii, ... gr. v (.3).

M. ft. pil. no. xx. S.: One pill two or three times a day.

℞ Massæ hydrarg., ... gr. xx (1.3).
Hydrarg. chlor. mit., . . . gr. x (.6).
Hydrarg. c. cretæ, ... gr. xx (1.3).
Ext. opii, ... gr. v (.3).

M. ft. pil. no. xx. S.: One pill twice a day.

The calomel may be given combined with opium, as follows:—

℞ Hydrarg. chlor. mit.,
G. opii, ... ãã gr. xij (.8).

M. ft. pil. no. xxiv. S.: One pill three times a day.

The effect of this must be carefully watched, as it rapidly produces the constitutional manifestations of the drug.

Bumstead recommends gray powder with quinine, as *in* the following formula:—

℞ Hydrarg. c. cretæ, ... gr. xl (2.6).
Quininæ sulphatis, ... gr. xx (1.3).

M. ft. pil. no. xx. S. : One pill three times a day.

Plummer's pill (Pil. antimonii co., U. S. P.) is also an efficient combination.

The bichloride may be administered either in pill or solution. Dupuytren's pills have long been held in high esteem. They are composed as follows :—

℞ Hydrarg. bichlor., ... gr. ij (.13).
Extr. opii, ... gr. iij (.20).
Extr. guaiaci, ... gr. xij (.80).

M. ft. pil. no. xij. S. : One pill twice a day.

The granules and tablet triturates of this salt, made by many of the manufacturing druggists, may also be used. The dose, to begin with, should not be over one-sixteenth of a grain (.004), and it should always be taken with, or immediately after, a meal.

The bichloride is, however, more frequently given in solution, as its irritant effects upon the gastro-intestinal mucous membrane can be better diminished by diluting it until it no longer irritates. The oldest formula of this kind is Van Swieten's liquor :—

℞ Hydrarg. bichlor., . . . gr. j (.065).
Sp. vini rectif., ... ℥ij (8.).
Aquæ, . . . q. s. ft. ℨij (60.).

M. S. : Teaspoonful in water, after meals.

Bumstead gives this formula, which is often more agreeable than the plain solution :—

℞ Hydrarg. bichlor.,
Ammonii chloridi, . . āā gr. iij (.20).
Tr. cinchonæ co.,
Aquæ, ... āā ℨiij (90.).

M. S. : Teaspoonful to a tablespoonful three times a day.

The bichloride may also be combined with iron, as in the following prescription :—

℞ Hydrarg. bichlor., . . . gr. ij (.13).
Tr. ferri chlor., . . . ℥ss (16.).
Syrupi limonis, . . . ℥iiss (76.).

M. S.: Teaspoonful in water, after meals.

Or this formula may be employed:—

℞ Hydrarg. bichlor., . . . gr. j (.065).
Tr. ferri chloridi, . . . ℥ij (12.).
Sp. chloroformi, . . . ℥ss (16.).
Aquæ, ... q. s. ft. ℥iv (120.).

M. S.: Dessertspoonful three times a day in sweetened water.

Many syphilographers give one of the iodides of mercury from the beginning. The mercurous iodide (green iodide, protiodide) is the salt usually employed, as the mercuric or red iodide is much more irritant to the stomach and bowels. It is frequently combined with lactucarium or opium to diminish its irritant qualities. Piffard recommends these prescriptions:—

℞ Hydrarg. iodidi viridis, . . . gr. xv (1.).
Ext. lactucarii, ... ℥j (4.).

M. ft. pil. no. c. S.: One or two pills three times a day.

℞ Hydrarg. iodidi viridis, . . . gr. xv (1.).
Pulv. ipecac. co., ... gr. cxl (10.).

M. ft. chart. no. c. S.: One or two powders, after meals.

Zeissl gives the remedy in this combination:—

℞ Hydrarg. iodidi viridis, . . . gr. x (.65).
Ext. lactucarii, ... gr. xv (1.).
Gummi opii, ... gr. iij (.20).

M. ft. pil. no. xxx. S.: One morning and night, after meals.

The tablet triturates of the protiodide may also be ordered. Those containing fractional doses ($\frac{1}{100}$–$\frac{1}{25}$ grain) are especially useful, as the dose can be regulated with the greatest nicety.

In the later secondary and early tertiary forms of eruption, especially the pustular and tubercular syphi-

lides, the mixed treatment is particularly applicable. The bichloride and biniodide of mercury are given in combination with one of the alkaline iodides.

A frequent combination is this :—

℞ Hydrarg. bichloridi, . . . gr. ij (.13).
Potassii iodidi, ... 3 ij (8.).
Aquæ, ... ℥iij (96.).
M. S. : Teaspoonful in water, after meals.

The mercuric or red iodide is often used with the iodide of potassium as in this formula, which is very popular in France, where it is prescribed under the name of Gibert's syrup :—

℞ Hydrarg. iodidi rubri, . . . gr. j (.065).
Potassii iodidi,
Aquæ, ... āā 3j (4.).
Syr. simplicis, ... ℥v (160.).
M. S. : Tablespoonful three times a day.

Or this prescription of Langston Parker may be used :—

℞ Hydrarg. iodidi rubri, . . . gr. iij (.20).
Potassii iodidi, ... 3j (4.).
Sp. vini rectif, ... 3j (4.).
Syr. zingiber, ... 3iij (12.).
Aquæ, ... ℥iss (48.).
M. S. : Twenty to thirty drops after meals.

The tannate of mercury, introduced by Lustgarten, is given in pill form in doses of one grain (.065), of which from three to five may be given a day. The carbolate of mercury has also been used by some observers, the dose being one-eighth of a grain (.008) three times daily.

The disturbances of digestion produced in many individuals by nearly all forms of mercury when given by the mouth has led many physicians to follow the practice of von Sigmund, the great leader of the Vienna

school of syphilographers, in the use of the inunction treatment. It may be mentioned, however, that the inunction treatment was not original with the Viennese syphilographer, but was practiced by laymen and physicians shortly after the violent epidemic outbreak of syphilis at the end of the fifteenth century. Grünpeck and Weidmann were among the first to recommend the use of mercurial ointments in the treatment of the disease. However, the opposition of Brant, Shellig, Ulrich von Hutten, Giovio, and others, brought the inunction treatment into disrepute until it was resuscitated by Louvrier and Rust at the beginning of the present century.

At the present day the inunction cure is the favorite plan of treatment with most experienced syphilographers. The ordinary mercurial ointment of the United States Pharmacopœia is usually employed, although some prefer the oleate, and Lang has recently recommended a preparation which he calls "oleum cinereum." This is a sort of fluid mercurial ointment, made by triturating mercury with lard and oil. It contains 20 per cent. of mercury.

The following succinct directions for the application of the inunction treatment are quoted from Bumstead and Taylor[1]:—

"Before commencing the treatment take a hot bath and cleanse the skin thoroughly with soap.

"The evening, before retiring, is the most favorable time for the application, when a piece of the ointment about the size of the terminal joint of the forefinger is to be rubbed, with the palm of the hand, into some portion of the body or extremities for about fifteen minutes.

[1] Venereal Diseases, fifth edition, p. 861.

"At each application a fresh surface should be selected, so as to avoid irritation from excessive friction of any one portion.

"Any of the ointment which remains after the rubbing should be left upon the skin, and not washed off; and the patient should wear the same flannel or merino under-clothes constantly night and day. The following order may be followed in the applications:—

"First evening, to the buttocks.

"Second evening, to the thighs, but not near the groins or scrotum.

"Third evening, to the sides of the chest, but not in the armpits.

"Fourth evening, to the internal surface of the arm and forearm.

"Fifth evening, to the back or belly. The former application is best made by an assistant, whose hand is protected by a glove.

"Sixth evening, omit the application.

"Seventh day, take a bath in the morning, change under-clothes, and in the evening resume the applications as above."

"Keep the mouth and teeth clean by the use of a brush and an astringent lotion, and the bowels open. If any symptoms of salivation occur, such as increased flow of saliva, tenderness or swelling of the gums, fœtor of the breath, etc., the applications should be suspended and the body cleansed with soap and water."

Hebra, in 1860, and Scarenzio, in 1864, used mercurial preparations, by the hypodermatic method, in the general treatment of syphilis. Ambrosoli, Berkeley Hill, and Bergh practiced this method; but G. Lewin, of Berlin, gave the subject especial attention, and, by his thorough and accurate researches, placed the hypo-

dermatic injection of mercurials among the recognized methods of treatment. The preparations used are very multiform. Hebra, Lewin, and others used the bichloride in solution; Scarenzio employed calomel, suspended in gum-water or glycerin; and, more recently, the albuminate, peptonate, formidate, bicyanide, biniodide, and nitrate have been employed. At present, calomel and yellow oxide, suspended in fluid vaselin, are used in two of the hospitals of Paris. In this country the method has a strong advocate in Shoemaker, of Philadelphia. The advantages claimed for it are: that it shortens the treatment, that it is cleanly, that it does not disarrange digestion, that the effects of mercury upon the gums are rarely manifested, that the amount of mercury introduced into the system can be more accurately measured, and that the patient can be kept under better control of the physician. Each dose must be administered by the latter. These claims are all pretty strongly indorsed by the advocates of the hypodermatic method, and most of them seem to be admitted. But, unfortunately, a method of so much promise has strong disadvantages, which militate against its general adoption. The injections are painful; they often leave inflammatory indurations, and not rarely abscesses. The treatment is not so uniformly successful as some have claimed, and the painful character of the injections causes dissatisfaction and complaint on the part of the patients. On the whole, the advantages of the method, great as they are, do not sufficiently outweigh its disadvantages. The preparations most frequently used for hypodermatic injection are the bichloride and calomel. Auspitz used the following formula:—

℞ Hydrarg. bichloridi, . . . gr. xv (1.).
Sodii chloridi, ... ʒss (2.).
Aquæ destill., ... ʒiij (96.).

M. S. : Fifteen drops to be injected every other day.

At the Lourcine Hospital, in Paris, Dr. Balzer employs the following:—

℞ Hydrarg. chlor. mit., . . . gr. v (.30).
Vaselini liq., ... ʒj (32.).

M. S. : Fifteen minims (1.) to be injected into the buttocks every two or three weeks.

Abscesses occurred in about 12 per cent. of cases.

Dr. DuCastel, of the Hôpital du Midi, employs the yellow oxide of mercury suspended in the same menstruum. The abscesses seem to be less frequent after the use of this preparation than when calomel is used. When hypodermatic injections are employed, it is important to observe the precaution to inject deeply, avoiding blood-vessels and organs that might be seriously damaged by the puncture or the possible subsequent inflammation.

The pain of the injections can be lessened by the addition of cocaine to the injection. A formula proposed by Dr. Mandelbaum is as follows:—

℞ Hydrarg. bicyanidi, ... gr. j (.065).
Cocaini hydrochlorat., . . . gr. v (.3).
Aquæ destillatæ, ... ʒiss (6.).

M. S. : Fifteen drops as an injection.

By the observance of antiseptic precautions, the formation of abscesses could, doubtless, often be prevented.

The treatment of syphilis by fumigations, as extolled and practiced by Langston Parker and Henry Lee, is not often employed in this country. Various forms of fumigating apparatus are sold by the surgical-instrument

makers, but a heated brick and a pail of water placed under a chair answer nearly as well as the most elaborate lamp or gas-fixture. A half-drachm of calomel is placed upon the hot brick, and the patient, divested of his clothing and enveloped in a blanket, takes a seat upon the chair. The mixed vapor of calomel and steam should be inhaled part of the time. It is probable that most of the effect of the mercurial is produced by that inhaled, and that very little is absorbed by the skin. It is important, however, that the mercurial vapor be mixed with the vapor of water if inhaled, otherwise it is likely to produce irritation of the lungs. Care must also be taken to have pure re-sublimed calomel.

After the fumigation, the patient wraps the blanket about him and goes to bed. The sublimed calomel, which has been deposited on the skin in a fine powder, should not be wiped off.

A method of treatment, which is sometimes useful on account of its local effect, is that by sublimate baths. These were first used by Baumé, in 1760.

About half an ounce of the bichloride, with an equal quantity of chloride of ammonium, is dissolved in six ounces of water and added to a bath of thirty gallons, at a temperature of from 90° to 95° F. The patient remains in the bath from an hour to an hour and a half. The method is especially useful in ulcerating and bullous lesions, and is, perhaps, more frequently employed in children than in adults.

Absorption through the skin is so irregular, however, that the mercurial bath is an unsatisfactory method of treatment. In some cases the effects of the agent upon the gums are promptly manifested, while in others a prolonged use of the baths is necessary before *any* results are obtained.

As accessory agents to the mercurial treatment, hot-air and simple water baths are very useful. It is probable that the good effects of the various popular thermæ —such as the Hot Springs of Arkansas, in this country, and of Aix-la-Chapelle, in Europe—are largely, if not entirely, due to their use as adjuvants, and not as principal remedies. It is well known that the methods of treatment of syphilis at the places mentioned comprise the most thorough mercurialization of the patients.

In the gummatous or tertiary stage of syphilis, while mercury is still useful, the main reliance must be placed upon iodine compounds. Although the iodides of sodium and ammonium are used to some extent, the potassium salt is the one most frequently employed. These preparations must always be well diluted, in order to avoid irritation of the stomach. The usual dose is five to ten grains three times a day, but, in certain cases, where a rapid impression is desired, from twenty to forty grains may be given every four hours. One of the best vehicles for the administration of the iodide is milk. It covers the taste pretty well, and prevents irritation of the stomach. The following is a convenient formula:—

℞ Potassii iodidi, ... ʒss (16.).
Aquæ, ... q. s. ft. ʒj (32.).

M. S.: Twenty drops (equivalent to ten grains) [.7] in milk three or four times a day.

Sometimes an aromatic or a bitter tonic are combined with the iodide as in these prescriptions:—

℞ Potassii *vel* sodii iodidi, . . . ʒij (8.).
Aquæ cinnamomi,
Syrupi, ... āā ʒiij (96.).

M. S.: Tablespoonful three times a day.

℞ Potassii iodidi, ... 3j (4.).
Tr. gentianæ co.,
Aquæ, ... āā ℥iss (48.).
M. S. : Dessertspoonful three times a day.

A favorite addition to prescriptions containing iodide of potassium is sarsaparilla or one or more of the vegetable alteratives. By some practitioners the latter remedies are alone used in the later stages of the disease, but most physicians use them in combination with the iodides and sometimes, also, with mercury. A prescription which I have frequently employed, and apparently with more benefit than the simple solution of iodide of potassium, is the following :—

℞ Hydrarg. bichloridi, . . . gr. ij (.13).
Potassii iodidi, ... ℥ss (16.).
Syr. sarsaparillæ co., . . . ℥vj (192.).
M. S. : Dessertspoonful three times a day, after meals.

A considerable number of quack nostrums against syphilis have as their active ingredients mercury, iodide of potassium, and some of the vegetable alteratives.

During the last five years a combination of vegetable alteratives, known as "McDade's Formula," has been largely used, principally on the recommendation of the late Dr. J. Marion Sims. The original formula consisted of a decoction, but the following is said to be also effective :—

℞ Ext. sarsaparillæ fl.,
Ext. stillingiæ fl.,
Ext. lappæ minor fl.,
Ext. phytolaccæ fl., . . . āā ℥ij (64.).
Tr. xanthoxyli carol., ... ℥j (32.).
M. S. : A teaspoonful to a tablespoonful three times a day, in water, before meals.

Under the name of *Syrupus Trifolii Comp.*, Messrs. Parke, Davis & Co. have introduced a preparation con-

taining trifolium pratensis, stillingia sylvatica, lappa officinalis, phytolacca decandra, berberis aquifolium, cascara amarga, and xanthoxylum Americanum, with eight grains (.52) of potassium iodide in each fluid-ounce (32.). I have used the formula with good effect in some cases, but the dose, to be effective, should be at least half an ounce (16.) three to four times a day.

One of the old alterative prescriptions is that known as "Zittmann's Decoction." It is largely used in Vienna, and, it is said, with excellent results. Two preparations are used,—the stronger and the weaker. The stronger decoction contains calomel and cinnabar, while the weaker contains only vegetable alteratives and aromatics. One pint of each is to be taken in the course of twenty-four hours.

Other methods of treatment, as that by iodoform, nitric acid, gold, potassium bichromate, and tayuya, have not fulfilled the promises made in their favor by certain writers. The favorable reports of potassium bichromate by Güntz should stimulate further experiment with this remedy. The tablet triturates made by the manufacturing druggists ought to be a good form for administration. It is extremely liable to derange the stomach, and should hence be given in minute doses. One tablet containing $\frac{1}{60}$ gr. (.001) could be safely given every two hours, and gradually increased to two or three tablets at the same interval.

The most carefully conducted medicinal treatment is likely to fail of its best results if hygienic measures are neglected. The syphilitic patient should be well fed, and guarded against undue exposure or overwork. His skin should be kept clean and active by baths. The clothing should be appropriate to the season, and

especial attention should be paid to the toilet of the teeth. Special tonic medication will often be necessary, —not only to counteract the depression due to the syphilitic virus, but the spoliative effects of certain remedies, such as mercury and the iodides in large doses. Iron, codliver-oil, and preparations of hypophosphites, are often required to keep up the strength of the system.

Duration of General Treatment.—In nearly all diseases coming under the notice of the physician, the special treatment is discontinued when the manifestations against which the treatment is directed have disappeared. In syphilis, on the contrary, a large proportion of practitioners recommend that treatment be continued for a term of months or years, irrespective of the presence or absence of lesions indicating the continuance of the malady. The reason given for this is that the disease may be present in a "latent" form, without giving rise to symptoms. In the present state of knowledge concerning the pathology of syphilis any speculations upon this subject would be premature in these pages. As the result of observation, however, most syphilographers are agreed upon the necessity, or advisability, at least, of prolonging the specific treatment of syphilis, either continuously or with occasional breaks, for two or three years, in order to completely cure the disease and prevent its subsequent recurrence. The plan of treatment which finds most favor at present is that developed by Dr. E. L. Keyes, of New York, and which is generally known as "the tonic treatment of syphilis by mercury." Dr. Keyes first finds by experiment what he calls the "full dose" of mercury which the patient will stand, and then diminishes this to one-half or one-third, which constitutes the "tonic dose."

To ascertain the "full dose," he begins with a small dose of the mercurial,—say $\frac{1}{6}$ grain (.01) of the green iodide,—and increases this very gradually until some effect is noticed upon the gums. When the "tonic dose" is established, this is continued uninterruptedly for three years or more. After this time the syphilis can usually be pronounced cured, although even then relapses sometimes occur. Under the influence of these minute doses of mercury the red corpuscles of the blood increase and the patient's general condition improves. Mild outbreaks of syphilitic symptoms sometimes occur, but the latter usually disappear under the continuance of the "tonic dose," or, if the physician thinks best, the "full dose" may be resumed until the manifestations disappear, when the "tonic dose" is again taken up and proceeded with. In case of gummatous lesions, iodide of potassium may be given alone, or side by side with the "tonic dose" of mercurial.

The intermittent plan of treatment consists in giving moderate doses of mercury for a time—say a month or two after the disappearance of active symptoms—and then intermitting for two to four weeks, during which iodine or tonics may be given. This course is recommended by such eminent syphilographers as Fournier and Taylor, but, in my experience, both of the methods here sketched are difficult to carry out. Few patients will persist in the use of medicines when they can see no use for it, and the general treatment in nearly all cases resolves itself into the treatment of individual outbreaks. Where the full co-operation of the patient can be obtained, the continuous administration of small doses—the Keyes plan—is rational, but I am confident the instructions of the physician will be obeyed in only a small minority of cases.

Salivation should be avoided, if possible, in the treatment of syphilis. However, in spite of every care, it sometimes occurs. Prophylactically, the teeth should be thoroughly cleansed several times a day, especially following meals, and any defects in the teeth should receive the attention of the dentist. When salivation occurs, the internal use of chlorate of potassium should be at once resorted to. I am accustomed to combine it with bicarbonate of soda, and think better results are obtained than when the chlorate is used alone.

If the salivary secretion is very free, the use of belladonna is rationally indicated.

As a mouth-wash I have found the following very efficient and pleasant:—

℞ Acidi carbolici puri, ... 3ij (8.).
Glycerini,
Tr. krameriæ, ... āā ℥j (32.).
M. S.: A teaspoonful in a wineglassful of water as a mouth-wash.

A 2- to 3-per-cent. solution of acetate of alumina is also a very efficient mouth-wash. A dilution of fluid extract of hydrastis may be used for the same purpose.

II. LOCAL TREATMENT.

In the erythematous syphilide, especially when it occurs on the scalp and face, the application of calomel or ammoniated mercury ointment often hastens the disappearance of the eruption. The following is especially useful when the eruption is localized about the angles between the nose and cheeks:—

℞ Hydrarg. ammoniat., . . gr. xx (1.3).
Glyceriti amyli, ... ℥j (32.).
M. ft. pasta.

When localized in the palms, the same application, or a 1- to 2-per-cent. red oxide-of-mercury ointment should be applied at night, and leather gloves worn.

For the balanitis which sometimes occurs as a consequence of the erythematous eruption upon the glans, a weak bichloride solution (1 to 2000) may be applied, or the following may be painted on with a camel's hair pencil once daily :—

℞ Hydrarg. bichlor., ... gr. ij (.13).
Alcoholis, ... ℥j (32.).—M.

The same application is useful in erythematous vulvitis, and in the red or grayish patches occurring on the tongue in syphilitic subjects.

Corrosive-sublimate baths (℥i–iv [4.–16.] to each bath) may also be used when the erythematous eruption is general.

In the papular syphilide of the face and forehead I have found the white-precipitate ointment promptly effective. Where an ointment is objectionable, the following lotion renders good service :—

℞ Hydrarg. bichloridi, . . . gr. iv (.25).
Glycerini, ... ℥j (4.).
Sp. vini rectif., ... ℥j (32.).
Aquæ aurantii flor., . . . ℥iij (96.).—M.

Dry, scaly papules of the palms and soles yield most rapidly to mercurial ointment, applied at night after soaking the hands and feet in hot water for ten or fifteen minutes. During the day the above bichloride lotion, or the glycerite of starch and white precipitate, may be used. If there is much infiltration, it is necessary to destroy the superficial epidermic layer with a strong solution of caustic potash (℥ss to ℥j) [1 to 16]. This is mopped on and immediately washed off with warm water, after which one of the above-mentioned mercurial ointments may be applied. Sometimes an ointment of salicylic acid (3 to 5 per cent.) alone, or

combined with resorcin (4 per cent.), or white precipitate, answers better.

For moist papules, Zeissl recommends careful cleansing with warm water, then applications of salt water and dusting with calomel. Ricord advises solution of chlorinated soda, followed by calomel-powder. In many cases, dusting the lesions with calomel and keeping them dry, and preventing friction by covering them with absorbent cotton, will produce a rapid cure. The importance of cleanliness in this form of syphilitic eruption cannot be overestimated. The offensive odor is best destroyed by frequent washing with dilute liquor sodæ chlorinatæ (1 to 10). The late M. Victor de Méric used the following with good effect :—

℞ Hydrarg. chlor. mitis,
Pulv. zinci oxidi, . . . āā 3ij (8.).
Ungt. simplicis, ... ℥j (32.).
M. ft. ungt. S. : Apply three or four times a day.

Lang uses a dusting-powder of salicylic acid and pulverized starch, as follows :—

℞ Acidi salicylici, ... gr. xx (1.3).
Pulv. amyli, ... ℥j (32.).—M.

The salicylic acid should be in the form of an impalpable powder, otherwise it causes considerable pain.

The pustular syphilide, if the pustules are unbroken, is benefited by sublimate baths. If there are small ulcers, covered with crusts and scabs, the latter should be softened and removed by the aid of a warm bath, and the lesions dusted with calomel, oxide of zinc, bismuth, or starch. Calomel ointment (5 to 10 per cent.) is also useful. If the remaining ulcers are slow to heal, they may be touched with solid nitrate of silver or tincture

of iodine, and then covered with calomel ointment, or thinly-spread mercurial plaster.

For the small, pustular syphilide of the scalp Taylor recommends :—

℞ Ungt. hydrarg. nitrat., . . . 3ij (8.).
Petrolati, ... ℥j (32.).
M. ft. ungt. S. : To be applied after shampooing.

The following makes a more agreeable pomade :—

℞ Ungt. hydrarg. nitrat., . . . 3ij (8.).
Balsam. Peruv., ... 3ss (2.).
Petrolati, ... ℥j (32.).
M. ft. ungt.

The tubercular and gummatous syphilides will usually yield to mercurial plaster, kept constantly applied. Gummata often resemble abscesses and boils very closely, and the temptation to plunge a bistoury into them with a view to evacuate the contents is exceedingly great. Absorption will, however, in most cases follow the application of mercurial plaster. In obstinate cases of the tubercular eruption, chrysarobin and salicylic acid in collodion, as in the following prescription, may be painted on once a day with a camel's hair pencil :—

℞ Chrysarobini, ... 3ss (2.).
Acidi salicylici, ... 3j (4.).
Collodii flexilis, ... ℥iss (48.).
M. Put a camel's hair pencil in the cork.

In some cases, scarifications, followed by mercurial plaster, or destruction with the galvano-cautery or by electrolysis, may be desirable, in order to hasten the disappearance of a dense infiltration.

Ulcerated gummata should first be cauterized with nitrate of silver or the galvano-cautery, or the infiltration

scraped out with the curette, and then dressed with iodoform in powder, or the following ointment:—

℞ Pulv. iodoformi, ... 3j (4.).
Bals. Peruviani, ... 3ss (2.).
Cerat. simplicis, ... ℥j (32.).
M. ft. ungt.

Lotions of carbolic acid (2 to 4 per cent.) are also useful. In some cases, nothing seems to answer so well as the simple mercurial ointment.

Lang injects a solution of iodine into the neighborhood of large gummata, or into the infiltration itself. The formula he uses is as follows:—

℞ Iodini, ... gr. iij (.2).
Potassii iodidi, ... 3ss (2.),
Aquæ destill., ... 3v (20.).
M. S.: A few drops to be injected by means of a hypodermatic syringe.

Zeissl uses the following stimulating ointment in ulcerating gummata:—

℞ Argenti nitrat., ... gr. ij (.13).
Balsam. Peruv., ... 3ss (2.).
Ungt. simplicis, ... 3ij (8.).
M. ft. ungt.

Syphilitic alopecia demands some attention from the physician, as patients are usually extremely anxious to preserve their hair. When the defluvium is accompanied by seborrhœa, the remedies appropriate to that condition should be used. The scalp should be shampooed once or twice a week with *spiritus saponis kalinus* of Hebra, followed by the alternate use of a 2-per-cent. solution of resorcin in bay-rum, and a 4- to 8-per-cent. white-precipitate ointment. Taylor uses the following hair-tonic:—

℞ Tr. cantharidis, ... ℥iss (48.).
Tr. capsici, ... ℥iv (16.).
Ol. ricini, ... ℥iss (48.).
Alcoholis, . . . q. s. ft. ℥viij (256.).
Ol. neroli, ... q. s. to perfume.

M. S.: Use once a day. Cutting the hair is unnecessary.

Onychia is best treated with a non-irritating mercurial ointment, which can be kept in contact with the diseased nail all the time. The glycerite of starch and calomel and oleate of mercury (2 to 4 per cent.) are good applications. In paronychia due to syphilis the fingers should first be immersed in hot water for ten or fifteen minutes, and afterward enveloped in mercurial ointment or mercurial plaster. When there is much pain, inflammation, or ulceration, painting with solution of nitrate of silver, tincture of iodine, and afterward dressing with iodoform and enveloping in mercurial plaster may give good results. Sometimes it is necessary to trim the nail so that the applications can be made directly to the seat of the infiltration. Corrosive-sublimate collodion (1 per cent.) is a cleanly and efficient application in the dry form.

When paronychia affects the toes the nails should be carefully trimmed to prevent irritation and pain on walking.

The dilute solution of subacetate of lead, to which tincture of opium has been added, will often promptly relieve the pain. Cocaine and belladonna ointment is also useful in some cases where the pain is very severe; but probably no single remedy is so effective in relieving this symptom as bathing the affected limb in hot water.

FORMULÆ.

1—℞ Acidi tannici, ... gr. viij (0.5).
Sp. myrciæ, ... ʒiv (120.).
M. For hyperidrosis of the hands and axillæ.

2—℞ Zinci oxidi, ... ʒj (30.).
Pulv. amyli, ... ʒiv (120.).
M. For hyperidrosis localis, acute vesicular eczema, herpes facialis, preputialis, etc.

3—℞ Pulv. calaminæ, . . . ʒij (8.).
Pulv. iridis Florentinæ, . . ʒj (30.).
Pulv. amyli, ... ʒiij (90.).
M. For hyperidrosis localis, and as a general dusting-powder.

4—℞ Pulv. acidi borici, . . . ʒj (4.).
Pulv. cretæ præcipitatæ, . ʒiv (120.).
Ol. rosæ, ... gtt. j (0.06).
M. For hyperidrosis localis, bromidrosis, chafe, etc.

5—℞ Acidi salicylici, . . . ʒij (8.).
Amyli, ... ʒss (20.).
Pulv. talci, ... ʒiiss (87.).
M. Used in the German army for sweating feet.

UNGUENTUM HEBRÆ.

6—℞ Emplastr. plumbi,
Ol. olivæ, . . . āā ʒiv (120.).
M. ft. ungt.
S.: Diachylon ointment. The most useful "stock ointment" in the treatment of skin diseases.

UNGUENTUM VASELINI PLUMBICUM.

7—℞ Emplastr. plumbi,
Vaselini, ... āā ℥iv (120.).

M. ft. ungt.

A modification of the preceding, first suggested by Dr. H. G. Piffard, of New York.

BORIC-ACID OINTMENT.

8—℞ Acidi borici, ... ℥j (4.).
Glycerini, ... ℥j (4.).
Cerati simplicis, . . . ℥ij (60.).

M. ft. ungt. For bromidrosis.

GLYCERITE OF STARCH.

9—℞ Amyli, ... ℥ij (8.).
Glycerini, ... ℥ij (60.).

M. Rub together in a mortar until thoroughly mixed, and then heat slowly with constant stirring.

SPIRITUS SAPONIS KALINUS.

10—℞ Saponis viridis,
Sp. vini rectif., . . āā ℥ij (60.).
Ol. lavandul., ... gtt. x (0.6).

M. Useful as a detergent agent in many skin diseases.

11—℞ Hydrarg. bichlor., . . . gr. j (0.06).
Sp. vini rect., ... ℥j (4.).
Ungt. aquæ rosæ, . . . ℥ij (60.).

M. ft. ungt.

12—℞ Hydrarg. oxid. rubr., . . gr. v (0.32).
Ungt. aquæ rosæ, . . . ℥ij (60.).

M. ft. ungt.

13—℞ Hydrarg. ammoniat., . . ℥j (4.).
Tr. capsici, ... ℥j (4.).
Vaselini, ... ℥ij (60.).
Ol. bergamii, ... gtt. iv (0.2).

M. ft. ungt.

14—℞ Sulphuris præcip., . . . ʒj (4.).
Ungt. aquæ rosæ, . . . ʒij (60.).
M. ft. ungt.

15—℞ Sulphuris præcip., . . . ʒj (4.).
Acidi salicylici, . . . gr. xx (1.3).
Vaselini, ... ʒij (60.).
M. ft. ungt.

16—℞ Ol. rusci crudi, . . . ʒj (4.).
Ungt. aquæ rosæ, . . . ʒij (60.).
M. ft. ungt.

17—℞ Ferri sulph.,
Potassii carb., . . . āā ʒj (4.).
M. ft. pil. no. xl.
S. : One or two three times a day. An excellent ferruginous tonic.

18—℞ Liq. potassii arsenitis,
Syrupi simplicis, . . āā ʒij (8.).
Vini ferri, ... ʒiss (45.).
Aquæ, ... ʒij (60.).
M. S. : Teaspoonful immediately before or after each meal. (Each teaspoonful contains nearly 4 minims of Fowler's solution.)

19—℞ Tr. ferri chlor., . . . ʒss (15.).
Acidi phosph. dil., . . . ʒij (8.).
Syrupi limonis, . q. s. ft. ʒiij (90.).
M. S. : Teaspoonful in water after each meal.

20—℞ Tr. calumbæ,
Aquæ calcis, . . . āā ʒiv (120.).
M. S. : Tablespoonful at meal-time.

21—℞ Magnesii sulph., . . . ʒj (30.).
Tr. ferri chlor., . . . ʒj (4.).
Aquæ, . . . q. s. ft. ʒiv (120.).
M. S. : Tablespoonful to be taken in a tumblerful of water before breakfast.

22—℞ Aceti, ... ℥ij (8.).
Glycerini, ... ℥iij (12.).
Kaolini, ... ℥iv (16.).
M. ft. pasta.

23—℞ Pulv. amyli, ... ℥ij (8.).
Ungt. aquæ rosæ, . . . ℥j (30.).
M. ft. ungt.

24—℞ Potassii acetat.,
Ext. taraxaci fl., . . āā ℥j (30.).
Aquæ, . . . q. s. ft. ℥iij (90.).
M. S.: Teaspoonful in a tumblerful of water three times a day, after meals.

25—℞ Potass sulphureti,
Zinci sulphatis, . . āā ℥ss (2.).
Glycerini, ... ℥j (4.).
Aquæ rosæ, . . q. s. ft. ℥iij (90.).
M. S.: Apply two or three times daily.

26—℞ Sulphuris præcip.,
Potassii carb.,
Sp. vini rectif.,
Glycerini, . . . āā ℥j (4.).
M. ft. pasta.
S.: To be applied at night in indurated acne.

27—℞ Acidi arseniosi, . . . gr. ij (.13).
Pulv. piperis nigr.,
Pulv. glycyrrhizæ, . . āā gr. xxxij (2.).
M. ft. pil. no. xxxij.
S.: One three times a day.

28—℞ Magnesii sulph., . . . ℥j (30.).
Tr. ferri chlor., . . . ℥iss (6.).
Aquæ, . . . q. s. ft. ℥iv (120.).
M. S.: Tablespoonful in a gobletful of water every morning.

29—℞ Tr. ferri chlor., . . . ℥iij (12.).
Acidi phosph. dil., . . . ℥ij (8.).
Syrupi limonis, . q. s. ft. ℥ij (60.).

M. S. : Teaspoonful in water after each meal.

30—℞ Potassii acetat.,
Ext. taraxaci fl., . . āā ℥j (30.).
Aquæ, . . . q. s. ft. ℥iij (90.).

M. S. : Teaspoonful in a tumblerful of water three times a day, after meals.

LASSAR'S PASTE.

31—℞ Acidi salicylici, . . . gr. x (.65).
Pulv. amyli,
Zinci oxidi, . . . āā ℥ij (8.).
Vaselini, ... ℥ss (16.).

M. ft. ungt.

32—℞ Ol. rusci, ... ℥ss (2.).
Ungt. aq. rosæ, . . . ℥j (30.).

M. ft. ungt.

33—℞ Pulv. zinci oxidi, . . . ℥ij (8.).
Mucil. acaciæ, ... ℥j (4.).
Emuls. amygdal., . . . ℥ij (60.).
Aquæ rosæ, . . q. s. ft. ℥iv (120.).

M. S. : Apply every three or four hours.

34—℞ Hydrarg. oxidi flav., . . gr. x (.65).
Pulv. amyli,
Vaselini, ... āā ℥j (30.).

M. ft. ungt.

LIQUOR PICIS ALKALINUS.

35—℞ Picis liquidæ, ... ℥j (30.).
Potassæ causticæ, . . . ℥ss (15.).
Aquæ, ... ℥iiss (75.).

M. S. : Dissolve the potash in the water and add slowly to the tar, in a mortar, with friction. To be used diluted with 1, 2, 4, or 8 parts of water.

36—℞ Hydrarg. bichlor., . . . gr. iv (.25).
Tinc. benzoini co., . . . ℥j (30.).
M. S. : Apply with a camel's hair pencil.

37—℞ Salol.,
Æther., ... āā ℥ss (2.).
Collodii flex., . . . ad ℥ij (8.).
M. Paint on chapped nipples.

38—℞ Pulv. zinci oxidi, . . . ℥ss (16.).
Pulv. camphoræ, . . . ℥iss (6.).
Pulv. amyli, ... ℥j (32.).
M. S. : Dusting-powder.

39—℞ Tr. lobeliæ, ... ℥ij (60.).
Sodii bicarb., ... ℥j (4.).
Aquæ, ... ℥ij (60.).

40—℞ Pulv. camphoræ, . . . gr. x (.6).
Cretæ preparatæ, . . . ℥j (30.).
Ol. lini, ... ℥ij (60.).
Bals. Peruv., ... gtt. xx (1.).
M. ft. pasta.

41—℞ Potassii acetatis, . . . ℥j (30.).
Ext. fl. taraxaci, . . . ℥ij (60.).
M. S. : Teaspoonful three times a day in a tumblerful water.

42—℞ Calcis vivæ, ... ℥ss (16.).
Sulphuris sublim., . . . ℥j (30.).
Aquæ, ... ℥x (300.).
Boil the mixture until it measures four fluidounces (120 and filter.

43—℞ Acidi salicylici, . . . ℥ss (2.).
Spiriti myrciæ, . . . ℥ij (64.).
S. : Apply night and morning with a soft rag or sponge.

44—℞ Acidi salicylici, . . . ʒss (2.).
Hydrarg. ammoniati, . . ʒj (4.).
Ungt. aquæ rosæ, . . . ℥j (32.).
M. ft. ungt.
S. : Apply at night.

45—℞ Saponis viridis, . . . ℥ij (64.).
Sp. vini rectificati, . . . ℥j (32.).
Hydrarg. bichloridi, . . gr. vj (.4).
Ol. lavandulæ, . . . gtt. x (.6).
M. Solve et filtra.
S. : Apply at night, and wash it off in the morning.

46—℞ Sodii boratis, ... ʒij (8.).
Potassii chlorat., . . . ʒj (4.).
Glycerini, ... ℥ss (16.).
Sp. vini rectif., . . . ʒiij (12.).
Aquæ rosæ, . . q. s. ft. ℥vj (190.).
M. S. : Apply with a soft sponge several times a day.

47—℞ Bismuthi subnitrat.,
Hydrarg. ammoniat., . āā ʒj (4.).
Vaselini, ... ℥j (32.).
M. ft. ungt.

48—℞ Acidi salicylici, . . gr. x–xxx (.7–2.).
Sulphuris præcip., . . ʒss (2.).
Pulv. amyli, . . . ℥ss (16.).
Ungt. aquæ rosæ, . . ℥j (32.).
M. ft. ungt.

49—℞ Acidi salicylici, . . . ʒss (2.).
Ext. cannabis Indicæ, . . gr. v (.3).
Collodii, ... ℥ij (64.).
M. S. : Put a small camel's hair pencil in the cork.

50—℞ Hydrarg. bichloridi, . . gr. xv (1.).
Collodii flexilis, . . . ℥j (32.).
M. S. : Paint on the warts once a day until they drop off.

51—℞ Adipis benzoati, . . . ʒj (4.).
Glycerini, ... ℥xl (3.).
Petrolati, ... ℨss (16.).

M. S. : Apply after bathing.

52—℞ Potassii bicarb., . . . ʒiij (12.).
Glycerini, ... ℨiss (48.).
Ungt. bismuthi oleatis, . . ℨiv (128.).—M.

DEPILATORIES.

53—℞ Barii sulphidi, ... ʒiss (6.).
Zinci oxidi, ... ʒvj (24.).
Coccionellæ, ... gr. j (.065).—M.

54—℞ Arsenici sulphidi flavæ, . . ʒss (2.).
Calcis vivæ, ... ℨss (16.).
Farinæ tritici, ... ℈ij (3.).

Mix with water to form a paste, and apply with a wooden spatula. In three or four minutes the paste is scraped off, the part washed with hot water, and a dusting-powder of starch or oxide of zinc applied.

55—℞ Calcii hydrosulphureti, . . ʒij (8.).
Glyceriti amyli,
Pulv. amyli, . . . āā ʒj (4.).
Ol. neroli, ... gtt. j (.065).—M.

This is applied in a thick layer, and washed off in ten to fifteen minutes with warm water. Afterward a dusting-powder should be applied.

56—℞ Sodii boratis, ... ʒiiss (10.).
Glycerini,
Tr. benzoini, . . . āā ʒj (4.).
Aquæ colognensis opt., . . ℨss (16.).
Aquæ aurantii flor., q. s. ft. ℨvj (192.).

57—℞ Tinct. capsici, ... ℨss (16.).
Glycerini, ... ʒij (8.).
Sp. myrciæ, . . q. s. ft. ℨviij (256.).

M. S. : To be well rubbed into the scalp nightly.

58—℞ Resorcini puri, . . . ʒss–j (2.–4.).
Sp. myrciæ, ... ʒviij (256.).—M.

59—℞ Sulphuris præcip., . . . ʒss (2.).
Sp. myrciæ, ... ʒviij (256.).—M.

60—℞ Sulphuris præcip., . . . ʒss (2.).
Ungt. aquæ rosæ, . . . ʒj (32.).
M. ft. ungt.

61—℞ Resorcini puri, . . gr. vx–xx (1.–1.3).
Ungt. aquæ rosæ, . . ʒj (32.).
M. ft. ungt.

62—℞ Acidi salicyli, ... gr. x (.7).
Sulphuris præcip., . . . ʒss (2.).
Ungt. aquæ rosæ, . . . ʒj (32.).
M. ft. ungt.

63—℞ Acidi carbolici, ... ʒi–iij (4.–12.).
Aquæ, ... Oj (500.).—M.

64—℞ Acidi salicylici, . . . ʒij (8.).
Acidi borici, ... ʒj (4.).
Glycerini,
Sp. vini rectif., . . āā ʒj (30.).
Aquæ, ... ad ʒviij (250.).—M.

65—℞ Acidi carbolici, ... ♏x (.7).
Lanolini, ... ʒj (32.).
M. ft. ungt.

66—℞ Thymolis, ... gr. x (.7).
Ungt. aquæ rosæ, . . . ʒj (32.).
M. ft. ungt.

CAMPHOR-CHLORAL.

67—℞ Camphoræ,
Chlorali hydrat., . . āā ʒij (8.).
M. ft. solutio.

68—℞ Cocaini, ... gr. x (.7).
Lanolini, ... ʒj (32.).
M. ft. ungt.

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